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JAMAICA.

ANNUAL REPORT

OF THE

SUPERINTENDING MEDICAL OFFICER,

TROPICAL DISEASES BUREAU
1915

*Together with the Reports on the following Departments of the Medical Service
of the Island, viz:*

THE PUBLIC HOSPITAL
THE LYING-IN HOSPITAL

THE LUNATIC ASYLUM
THE LEPERS' HOME

FOR

TROPICAL DISEASES BUREAU
RECEIVED
29 MAR. 1915

THE YEAR ENDED 31ST MARCH, 1914.

Ordered by His Excellency the Governor to be Printed.



JAMAICA
GOVERNMENT PRINTING OFFICE, KINGSTON.

1914.

ISLAND MEDICAL DEPARTMENT.

Report for the year ended 31st March, 1914.

Island Medical Office, Kingston, 17th June, 1914.

SIR,

I have the honour to forward the accompanying returns and Reports, including the Report of the Government Bacteriologist, for the information of His Excellency the Governor embracing the Financial year which began on April 1st, 1913, and which ended on March 31st, 1914.

APPOINTMENTS.

Dr. T. A. Dryden, Supernumerary Medical Officer, was appointed District Medical Officer for Manchioneal, a newly revived district (retrenched some years back) on May 5th, 1913.

Dr. G. S. Richardson, who was sent out from England as Supernumerary Medical Officer was appointed on May 25th 1913.

Dr. R. F. Russell, who was also sent out from England, was appointed Supernumerary Medical Officer on September 11th, 1913.

Dr. R. M. Stimpson was appointed Medical Officer of the Temporary Outstation at Southfield and the Mannings Home on October 8th. 1913.

Dr. Henry Catto, Assistant Bacteriologist to the Island Medical Department, arrived on 27th October, 1913.

Dr. S. C. DePass, Dental Surgeon for the year 1913-14 to the Public Hospital, was appointed on 1st April, 1913.

RESIGNATIONS.

Dr. A. R. Todd, Medical Officer in charge of the Pedro temporary Out station, resigned on August 1st, 1913.

Dr. G. S. Richardson, who suffered from very bad health during his six months residence in the Island, resigned his appointment for the above reason on December 1st, 1913.

LEAVE GRANTED.

The following Officers were granted leave during the financial year:

Name.	Period of Absence.	Period during which Absent.	Acting Officer.
Dr. Eyre Smith ..	7 months & 7 day	From 23.4.13 to 28.11.13	D . H. E. Cheyne
Dr. W. D. Neish ..	2 months	From 8.5.13 to 7.7.13	} D . J. H. Peck
	9 days	9.2.14 to 17.2.14	
	9 days	From 20.2.14 to 28.2.14	
Dr. D. J. Williams ..	6 months	3.7.13 to 2.1.14	Dr. T. F. Shackleton
Dr. R. G. Sherlock ..	2 weeks	28.7.13 to 11.8.13	Dr. A. M. Mills
Dr. F. H. Cooke ..	6 weeks	21.7.13 to 6.9.13	Dr. A. J. Salmon
Dr. L. M. Clark ..	1 month	1.9.13 to 30.9.13	Dr. J. H. Abrahams
Dr. H. H. Scott ..	2 month & 23 days	2.10.13 to 23.12.13	Drs. C. A. H. Thomson & H Catto
Dr. G. S. Richardson ..	2 months & 8 days	22.9.13 to 30.11.13	Dr. H. E. Bond
Dr. C. W. M. Castle ..	3 months & 8 days	17.11.13 to 24.2.14	Dr. G. H. K. Ross
Dr. F. R. Evans ..	6 week	1.12.13 to 10.1.14	Dr. T. A. Dryden
(Non-permanent Officer)			
Dr. J. G. Moseley ..	6 weeks	18.6.13 to 23.7.13	Dr. C. A. Moseley
Dr. J. G. Moseley ..	6 weeks	1.10.13 to 10.11.13	Dr. C. A. Moseley

Return showing the daily total cost per patient, and the daily cost per patient for maintenance only at the several Public General Hospitals.

	Daily total cost per patient.	Daily cost per patient for maintenance only.
	s. - d.	d.
Morant Bay ..	0 11 $\frac{3}{4}$	5 $\frac{1}{4}$
Hordley ..	0 10	5 $\frac{3}{4}$
Port Antonio ..	0 10	5 $\frac{3}{4}$
Buff Bay ..	0 9 $\frac{1}{2}$	6 $\frac{1}{4}$
Annotto Bay ..	0 8 $\frac{1}{2}$	5
Port Maria ..	0 10 $\frac{3}{4}$	5
St. Ann's Bay ..	1 5	7
Cave Valley. ..	1 6 $\frac{1}{2}$	5 $\frac{1}{2}$
Falmouth. ..	1 6	7
Montego Bay ..	1 0 $\frac{1}{4}$	6 $\frac{1}{4}$
Lucea ..	1 2 $\frac{1}{4}$	5 $\frac{1}{4}$
Sav.-la-Mar ..	0 8 $\frac{1}{2}$	4 $\frac{1}{4}$
Black River ..	1 3 $\frac{1}{4}$	5 $\frac{1}{4}$
Mandeville ..	1 2 $\frac{3}{4}$	6 $\frac{3}{4}$
Chapelton ..	1 1 $\frac{3}{4}$	6 $\frac{3}{4}$
Lionel Town ..	0 10	4 $\frac{1}{2}$
Spanish Town ..	0 8 $\frac{1}{2}$	4 $\frac{3}{4}$
Linstead ..	1 1	6
	18 8 $\frac{1}{4}$	8 6 $\frac{1}{4}$

Return of Expenditure for Island Medical Department for year ending 31st March, 1914.

	Personal Emoluments.	Other Charges.	Gross Expenditure.	Amount of Dues Collected.	Actual Expenditure after deducting Amount passed to credit of Hospital.	Amounts of Grants Estimated.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Head Office ..	2,656 8 9	6,555 17 4	9,212 6 1	2,004 13 2	7,207 12 11	9,272 5 6
District Medical Officers ..	5,899 13 7	..	5,899 13 7	..	5,899 13 7	5,850 0 0
Supernumerary Medical Officers ..	338 16 11	..	338 16 11	..	338 16 11	400 0 0
Temporary Outstations and Dispensary Appointments ..	140 14 6	..	140 14 6	..	140 14 6	150 0 0
Public General Hospitals—						
Morant Bay ..	204 15 4	358 6 6	563 1 10	15 2 3	547 19 7	575 8 0
Hordley ..	283 8 6	742 19 1	1,026 7 7	15 14 10	1,010 12 9	1,063 16 0
Port Antonio ..	534 10 0	1,727 19 8	2,262 9 8	68 19 6	2,193 10 2	2,500 5 0
Buff Bay ..	541 6 4	1,865 5 2	2,406 11 6	14 9 6	2,392 2 0	2,845 9 0
Annotto Bay ..	477 5 0	1,447 4 1	1,924 9 1	31 4 7	1,893 4 6	1,722 15 0
Port Maria ..	353 3 0	886 1 3	1,239 4 3	22 14 11	1,216 9 4	1,703 1 0
St. Ann's Bay ..	250 11 0	332 9 5	583 0 5	8 6 5	574 14 0	552 19 0
Cave Valley ..	67 3 0	99 18 5	167 1 5	11 16 8	155 4 9	194 8 0
Falmouth ..	212 3 3	229 3 4	441 6 7	46 19 8	394 6 11	493 14 0
Ulster Spring ..	..	5 12 9	5 12 9	..	5 12 9	197 0 0
Montego Bay ..	270 17 0	668 0 5	938 17 5	14 9 2	924 8 3	986 16 0
Lucea ..	235 5 0	349 12 5	584 17 5	7 11 10	577 5 7	609 1 0
Sav.-la-Mar ..	469 19 1	1,374 3 6	1,844 2 7	46 15 0	1,797 7 7	1,977 5 0
Black River ..	219 13 0	274 17 3	494 10 3	9 4 8	485 5 7	530 14 6
Mandeville ..	228 18 1	422 15 9	651 13 10	8 17 9	642 16 1	715 8 0
Chapelton ..	282 12 3	513 7 9	796 0 0	13 15 5	782 4 7	917 12 0
Lionel Town ..	396 14 11	732 11 4	1,129 6 3	14 0 2	1,115 6 1	1,291 2 0
Spanish Town ..	477 1 5	1,313 4 1	1,790 5 6	24 7 4	1,765 18 2	1,988 6 4
Linstead ..	243 19 4	449 18 5	693 17 9	4 2 0	689 15 9	729 4 0
Yaws Fees ..	1,820 11 9	..	1,820 11 9	..	1,820 11 9	2,000 0 0
Investigation into Pelagra do Vomiting Sick- ness ..	..	100 0 0	100 0 0	..	100 0 0	100 0 0
..	..	23 4 6	23 4 6	..	23 4 6	100 0 0
Drugs and Poisons Law ..	14 2 0	..	14 2 0	..	14 2 0	17 0 0
Medical Attendance on Immi- grants ..	435 19 3	..	435 19 3	..	435 19 3	512 0 0
Public Hospital ..	4,940 9 10	5,752 9 9	10,692 19 7	741 17 7	9,951 2 0	10,933 13 6
Lunatic Asylum ..	6,666 16 11	12,946 17 9	19,613 14 8	9,940 15 7	9,672 19 1	19,313 0 6
Lepers Homes ..	949 7 2	1,592 1 8	2,541 8 10	0 3 0	2,541 5 10	2,564 0 0
Victoria Jubilee Hospital ..	570 16 9	674 7 6	1,245 4 3	561 11 4	683 12 11	1,384 10 0
Vaccination Fees ..	1,976 19 4	..	1,976 19 4	..	1,976 19 4	2,000 0 0
Medical Officer, General, Penitentiary ..	270 8 4	..	270 8 4	..	270 8 4	250 0 0
Health Officer, Port Royal ..	450 0 0	..	450 0 0	..	450 0 0	450 0 0
Quarantine ..	203 6 9	690 9 9	893 16 6	..	893 16 6	1,072 2 0
Central Board of Health ..	..	79 13 1	79 13 1	..	79 13 1	50 0 0
Medical Council ..	..	..	..	..	..	20 0 0
Total Expenditure, etc. ..	33,083 17 4	42,208 11 11	75,292 9 3	13,627 12 4	61,664 16 11	78,032 15 4

Value of Drugs, etc., issued to the various Institutions, etc., from the Island Medical Stores during the financial Year 1913-1914.

Value of drugs and sundries issued to the Public General Hospitals, Lepers' Home and Medical Districts ..	£2,698 16 2
Value of Stimulants issued to Public General Hospitals and Lepers' Home ..	51 2 5
Value of drugs, etc. issued to Kingston Hospital ..	862 16 9
do drugs, etc., issued to Jubilee Hospital ..	46 5 4
do Stimulants issued to Jubilee Hospital ..	1 6 9
do Drugs, etc., issued to Lunatic Asylum ..	315 16 3
do Stimulants issued to Lunatic Asylum ..	9 10 9
do Drugs, etc., issued to Prisons and Reformatories ..	156 3 4
do Stimulants issued to Prisons and Reformatories ..	11 12 0
do Drugs, etc., issued to Agricultural Department ..	27 2 11
do Drugs, etc., issued to Quarantine Station and Visiting Officers ..	4 2 9
do Drugs etc., issued to Schools Department ..	13 0 7
do Drugs, etc., issued to Parochial Boards ..	569 19 3
do Drugs, etc., issued to Constabulary Department ..	41 3 1
do Quinine in packets supplied to Post Offices, etc. ..	226 11 8
do Drugs and sundries sold ..	77 14 0
do Lymph issued to District Medical Officers ..	328 4 10
do Quinine issued to Schools ..	65 19 0
do Quinine issued to Estates ..	176 4 0
do Instruments supplied to Public General Hospitals ..	78 17 10

£5,762 9 8

During the year there was one general examination under Law 34 of 1894, at which 14 Candidates presented themselves, including two from the Kingston Hospital, and were granted Licenses. Return showing the number of cases prosecuted at the instance of the Constabulary for violation of Law 34 of 1894—The Drugs and Poisons Law during the year ended 31st March, 1914.

Parish	Title of Case.	Nature of Offence.	Date of Trial.	Result.	Remarks.
St. Mary	Rex vs. Samuel Ferguson	Selling poison to unknown person without a witness identifying the purchaser	17.10.13	Reprimanded	
St. Catherine	Rex vs. James Williams	Selling Ganga without a License	9.12.13	Fined 10/ & 1/4½ costs, or 7 days	Fine paid
do do	Rex vs. John Lashman	do do	9.12.13	Fined 10/ & 1/4½ costs, or 7 days	Fine paid

QUARANTINE.

Chairman and Members of Quarantine Board.

The restrictions imposed from time to time against countries in which Infectious diseases had appeared have, I am glad to say, assisted to keep this Island free from such diseases.

In the early part of the year Small-pox was present in Grenada, Pensacola, Baltimore and St. Lucia. In each case the usual Small-pox regulations were put in force, and their efficiency has been proved by the fact that not a single case of the disease has been discovered, even on board ships coming to this Island. In due course the disease was stamped out in each country and the Quarantine Restrictions withdrawn.

In August two cases of Small Pox were removed from the R.M.S. Danube at Trinidad.

An investigation into the source of infection showed that these persons had come from the Pacific coast of South America and were only in transit passengers through the Isthmus.

The Small-pox Regulations were put in force against persons from the Pacific Coast of America and still remain.

In November Small-pox was reported at Santa Martha and the usual precautions were at once taken.

The Colombian Authorities kept the disease well under control, and in a very short time it was stamped out and the restrictions were accordingly removed.

Small-pox was reported in the latter part of the year at Martinique, Grenada, Baltimore, and Galveston, and were met by the enforcement of the usual Regulations and which are still in force against those places.

Yellow Fever has been reported as present during the year in Brazil, Venezuela, Trinidad, Mexico and Carthageva.

The danger from Brazil on account of the distance need not be taken account of, and our direct communication with Venezuela and Mexico is very rare. Only one case of fever developed at Carthageva, and it was afterwards shown to be Malarial fever.

The disease broke out in Trinidad on November 27th at the seaport of La Brea.

The authorities at once took the outbreak in hand, and the measures adopted quickly stamped it out. In all there were only two cases.

Quarantine precautions were put in force against La Brea. These, together with the care taken, by the sanitary authorities of Trinidad to prevent the spread of the disease, were sufficient to safeguard this Island from any risk of infection.

Plague is still prevalent in Brazil, the Argentine Republic and Venezuela. In fact it may be considered as endemic in those countries. Vessels from there are fumigated here on arrival, and as cargo is not accepted there is no direct danger of infection from that source.

From time to time cases of Plague at the Azores, the Canary Islands and the Cape Verde Islands have been reported. It is very difficult however to obtain reliable information in regard to these places, and the Board felt it necessary in the interest of the health of the Island, to place the restrictions in force against these places, and they still remain.

Plague was reported to be present at Jacmel on June 18th. This Island has frequent communication with that port, and as a steamer had just called there, been granted pratique here, and had again left, considerable anxiety was caused by the report. Quarantine restrictions were at once imposed on all arrivals from Haiti.

In the meantime most conflicting reports in regard to the disease were received.

The matter was finally settled by the appointment of a Commission by the Government of Cuba to investigate the disease.

The Commission travelled to Jacmel and after due investigation reported to their Government that the disease was not Bubonic Plague.

The findings of the Commission were reported to this Government by the Charge d'Affaires at Havana. They were accepted by the Board, and the quarantine withdrawn.

Trinidad and Porto Rico have kept free of Plague during the year. The examination of rats for Plague infection has been continued in both countries throughout the year. No Plague infected animal has been found.

On March 5th Plague at Havana was reported. The Plague Regulations were at once put in force against the western provinces of Cuba and remained.

Modified precautions against the other provinces of Cuba were also adopted and are still in force.

The Republic of Haiti and San Domingo, the Isthmus and the Republic of Central America have been free from infectious disease during the period under review.

The Republic of Brazil and the Argentine were declared Infected Places for Plague during the year. The Proclamation is still in force.

The Proclamation in force at the commencement of the year against Cuba and Porto Rico for Plague was withdrawn.

During the year 1 steamer and 11 barques were fumigated at Port Royal.

The large and small fumigators have been in use throughout the year.

Both machines when in order do excellent work. They have, however, on several occasions given trouble, and will continue to do so until a mechanic to operate and keep them in order is provided. The present method of obtaining a mechanic from the Railway is unsatisfactory. The best work is not obtained from the machines, and they have not always received the care that is necessary to keep them in order.

The lighter which was placed on the estimates to accommodate the two disinfectors was at the last moment cut out. We are still dependent on the Harbour Master for the use of his lighter, which is unsuitable for the large disinfector and the moving of this heavy machine into and out of the lighter so frequently is not only detrimental to the machine but opposed to an efficient disinfecting service.

The telephone between Kingston, Port Royal and the Quarantine Station which was broken by the S.S. Metapan fully a year ago has neither been repaired nor replaced and its absence forms a serious handicap to the efficient and rapid handling of shipping and the control of the Quarantine Station when occupied.

The Quarantine Station is in good order and fully equipped but has one drawback, that it is difficult if not impossible to isolate batches of people for one disease from those under observation for another disease.

Over two hundred persons have been accommodated there at a time. 225 persons were detained there during the year.

The Station was on several occasions lent to the Immigration Department for the purpose of Thymolising coolies on their arrival from India.

Law 8 of 1913—A Law amending the Quarantine Law came into force at the end of September and its provisions have been of incalculable value in enabling the Quarantine Board to take effective measures against the introduction of plague.

All vessels arriving at a Port in Jamaica while alongside are now required to have all mooring lines protected with approved metallic ratguards, raise their gangways at sunset and in addition vessels of small freeboard must fend off 8 feet at 6 p.m.

These Regulations give a certain amount of protection against the introduction of Plague infected rats but there is always the danger of infected rats being landed in cargo that has been transhipped elsewhere and to combat this source of danger the Local Health Authorities at all seaport towns should maintain an efficient and constant deratization service along the seafront.

It is well to remember that no rats mean no plague, and steps to secure this desirable end should be taken.

C. DON,
Secretary Quarantine Board.

GENERAL SANITATION.

In the Gazette dated 28.8.13 His Excellency the Governor by the undermentioned Proclamation declared the following things (under Sub-section 12, Section 13 of the Health Law 35 of 1910) to be "Nuisances."

This addition to the list of Nuisances was made with a view to the introduction of sanitary latrines and to the control of the spread of Hookworm infection.

It was apparent that the Local Boards of Health and their Sanitary Officers were not taking action as they might have done under Section 13 Sub-section 1.

A PROCLAMATION.

WHEREAS it is provided by Sub-section 12 of Section 13 of Law 35 of 1910, "The Health Law 1910," that anything that the Governor in Privy Council, on the recommendation of the Central Board of Health, shall declare to be a nuisance by Proclamation in the Jamaica Gazette shall be a nuisance under the Law—

Now, therefore, I, the Governor in Privy Council on the recommendation of the Central Board, do, by this Proclamation, declare that the following shall be nuisances under the said Law, namely:—

1. All so-called surface latrines or privies and all privies or latrines to which beast and poultry have access.
2. Within the limits of any Village or Town the deposit of human faeces on to, or in any premises or place other than into a properly constructed closet, or privy of such description and construction as is approved by the Medical Officer of Health of the district or by a Medical Officer appointed by the Governor or on to a sewage farm.
3. Outside the limits of towns and villages the deposit of human faeces on to or in any premises or place other than a pit, hole, or trench of such description and construction as the Medical Officer of Health may require, or on to a sewage farm.
4. The lying exposed or uncovered of human faeces on the surface of the ground of any premises or place within or without a town or village other than a Sewage Farm.

Given under my hand and the Broad Seal of this Island at King's House, this twenty-fifth day of August in the fourth year of the reign of His Majesty King George V, Annoque Domini, 1913.

By command,

P. C. CORK,
Colonial Secretary,

RAT REGULATIONS.

On November 19, 1913, (Gazette dated 20th Nov., 1913) His Excellency the Governor also declared the following Rat Regulations to be in force.

It is to be hoped that by means of a systematic rat campaign by the Local Boards of Health and steady examination of rats by the Government Bacteriologists any early appearance of Plague among rats, should such disease unhappily gain entrance to the Island, may be taken in hand and nipped in the bud at once.

A circular letter dated 17th March, 1914, was addressed to all the Local Boards of Health by the Central Board of Health calling upon them to carry out these Regulations, special reference being made to Sections 1, 9 and 11.

No. 585.

Colonial Secretary's Office, 19th November, 1913.

The Governor in Privy Council has approved of the following Regulations for the extermination of Rats which have been made by the Central Board of Health under Section 8 of Law 35 of 1910.

By command,

P. C. CORK, Colonial Secretary.

RAT REGULATIONS.

Made under Section 8 of Law 35 of 1910.

Section 1. Every Local Board of Health shall carry out steadily and continuously measures for the extermination of rats in such manner as may be directed from time to time by the Central Board of Health.

The cost of such measures shall be paid for out of the Sanitary Fund of each parish; but nothing in these Regulations shall prevent:

- (a) The Legislative Council from voting grants for the purpose from time to time;
- (b) The Governor, should he think it necessary, from devoting any part of any moneys that he may have at his disposal for the purpose of aiding sanitation to the purpose for which these regulations are drawn up.

Section 2. Any such Local Board of Health may by Public notice offer to pay a reward for every rat dead or alive delivered by any person at the office or to the party named in such notices and may at any time by further public notice amend such offer or suspend the payment of the reward or by a like notice again resume such payment.

Section 3. (a). The Local Board of Health may from time to time issue or give directions to the owners or occupiers of any premises to take such measures for the destruction of rats or other vermin as they may prescribe.

(b) The Local Board or Health Officer may also, at any time (by written notice given) call upon any occupier or owner of premises to carry out within such time as they shall fix such measures for the destruction of rats or other vermin as may be prescribed in such notice in such manner and for such period as may be stated in the notice.

Section 4. It shall be lawful for the Local Board of Health by means of any of its Sanitary Officers to enter upon any premises at any reasonable time for the purpose of ascertaining whether the requirements of any notice have been complied with.

Section 5. Any owner or occupier who after notice fails or neglects to comply with any of the directions or requirements of the Local Board of Health shall be liable to be prosecuted by the Local Board or by any Sanitary Officer or by any one appointed by the Central Board of Health or by the Governor for Sanitary purposes, and on conviction before a Resident Magistrate or two Justices of the Peace shall be liable to a penalty not exceeding £5 and in default of payment he may be imprisoned with or without hard labour for such time not exceeding one month as the Court may decide.

Section 6. Where the owner or occupier of premises fails to take the measures as directed as aforesaid by the Local Board of Health or is unable from poverty or other such cause to carry out such measures the Local Board of Health shall serve the owner or occupier with a seven days notice in the Form A attached and shall at the expiration of such notice enter such premises at any time in the day and cause the requisite measures to be taken for ridding the premises of rats or otherwise effect the measures directed.

Section 7. Any person who claims an interest in premises in respect of which a notice in the Form A attached has been served, and who objects to the Local Board of Health entering such premises in the pursuance of the terms of such notice shall be at liberty to apply for relief to the Resident Magistrate or two Justices of the Peace at any time before the expiration of such notice, and the Resident Magistrate or two Justices of the Peace shall, after hearing the applicant's objections and giving the Local Board of Health an opportunity to adduce advice thereon, decide whether the objections of the applicants or the notice proposed by the Local Board of Health are or is reasonable, or whether the applicant should be given further time within which he should take the requisite measures for exterminating rats on such premises.

The decision of the Resident Magistrate or two Justices of the Peace on all questions of fact, so raised, shall be final and conclusive.

No court fee or stamp duty shall be payable by any applicant under this Regulation.

Section 8. Where any premises believed to be infested with or to harbour rats are vacant, and the owner thereon is unknown, the Local Board of Health may affix a notice on such premises in the Form B comprised in the Schedule hereto, stating that it is the intention of the Local Board of Health to enter the premises and to commence operations for ridding the same of rats on or about a date to be specified (such date to be at least three days after the day when such notice is so affixed or earlier should the case be one of emergency); and after the expiration of such notice it shall be lawful for the Local Board of Health to enter the premises and take the requisite measures accordingly;

Provided as follows:—

(a) The Local Board of Health shall not exercise the power of entry aforesaid if any person claiming ownership or any interest in the vacant premises, comes forward and undertakes to comply with the requirements of the Local Board of Health, in respect to the extermination of rats on such premises;

(b) The Local Board of Health shall not effect an entry under this regulation which would entail the breaking open of any door, gate or other fastening or enclosure, but in such case the Magistrate of the district upon the application of the Local Board of Health and upon his being satisfied that the prescribed notice has been duly affixed on the vacant premises, is hereby empowered to order the Police to effect the entry in whatever manner seems to them most convenient and to take charge of the premises during the period that the necessary measures are being taken by the Local Board of Health for exterminating the rats therein.

During such period the Police shall be responsible for the safe custody of the vacant premises and for securely refastening the same after the necessary measures have been completed.

9. It shall be the duty of every clerk to a Parochial Board in the Island to send up all or such number or proportion of rats caught in his Parish to the Government Bacteriologist for examination as may be required by the Central Board of Health. Such rats shall be sent up as soon as possible after being caught and shall be sent up packed in such manner as may be required by the Central Board of Health.

10. Every Clerk to a Parochial Board shall keep a true record of all rats caught in the Parish and reported to the Local Board.

11. Whenever the Central Board of Health shall so require by notice published at least twice in the Jamaica Gazette it shall be the duty of every owner or occupier of premises to report to the Clerk of the Parochial Board of the Parish in which his premises are situate the number of rats caught weekly on his premises and the Local Board may require the rats to be sent to their Clerk or may require that some distinguishing portion of such rat be sent and thereupon it shall be the duty of such owner or occupier to comply.

12. Any breach or non-observance of these regulations (or notices given thereunder) shall be punishable on summary conviction before a Resident Magistrate or two Justices of the Peace by a fine not exceeding £5 and in default of payment by imprisonment with or without hard labour for any period not exceeding one month.

13. All the powers given in these regulations to any Local Board of Health or Health Officer shall also be possessed by any Superintending Inspector appointed by the Governor.

14. These Regulations shall have effect throughout the whole Island of Jamaica.

Passed by the Central Board of Health on the tenth day of October, 1913.

J. ERRINGTON KER,
Chairman Central Board of Health.

M. C. SOLOMON,
Secretary Central Board of Health.

Approved by the Governor in Privy Council this 14th day of November, 1913.

D. H. HALL, Actg. Clerk Privy Council.

FORM A.

(Notice to owner or occupier of premises that the Local Board of Health intends entering such premises to destroy the rats therein.)

To.....

M.....

Whereas on the day of last a notice was served on you requiring that certain measures should be taken, as therein specified for the destruction of rats or other vermin on the under-mentioned premises: And whereas no such effective measures as aforesaid have taken place: You are hereby notified that the Local Board of Health, intends causing your premises situate at now in the occupation of to be entered for the purpose of effective measures being taken to rid the same of such rats or other vermin.

Such entry will be made and measures commenced on or about day the instant, unless you consent to such measures being taken before that day.

(You or any other person who has an interest in the above mentioned premises may appeal to the Resident Magistrate or two Justices of the Peace against the action of the Local Board of Health herein notified, at any time before the date last hereinbefore mentioned).

Dated this day of 19

For the Local Board of Health.

The date fixed to be seven days.

FORM B.

(Notice to be affixed on vacant premises, of which owner is unknown.)

NOTICE.

It is the intention of the Local Board of Health to enter upon these vacant premises on or about day of instant and then to commence operations for ridding the same of rats.

If any person claiming ownership or having an interest in these premises wishes to undertake, himself, the necessary measures for exterminating rats, he should inform the Local Board of Health personally, or by writing addressed to the Local Board of Health at the office of the Board before the day above mentioned.

Dated this day of 1913.

For the Local Board of Health.

This date to be fixed at least seven and not more than 14 days after serving of notice on premises.

VACCINATION.

Year.	Number.			Payments.			Totals.
	Success-ful.	Unsuccess-ful.	Did not return.	D.M.O.	Constables.	Registrars.	
1908-9 ..	21,662	705	562	£970 14 0	£254 8 8	£226 0 1	£1,451 2 9
1909-10 ..	22,786	653	461	1,054 8 0	279 5 8	257 1 1	1,590 14 9
1910-11 ..	23,106	617	559	993 5 0	259 1 3	246 17 4	1,499 2 7
1911-12 ..	19,784	2,933	663	757 7 0	215 10 5	251 17 5	1,224 14 10
1912-13 ..	26,103	393	343	649 14 8	1,034 3 6	248 6 11	1,932 5 1
1913-14 ..	29,219	1,207	591	1,390 5 0	370 5 6	216 8 10	1,976 19 4

The payments made are as follows:—

one shilling, for each successful case, to the D.M.O.

threepence, for every case brought out, to the District Constable.

twopence, to the Registrar, for every birth notified.

The above is the return for last and some previous years.

The children of the Island are protected against smallpox but very little revaccination takes place, consequently one may say that the Adult population are very poorly protected, if at all.

YAWS.

During the past year more attention has been given to the treatment of Yaws by Salvarsan.

A list is herewith attached showing the number of cases of Yaws treated by Salvarsan in the various Hospitals and also in the districts.

With a view to pushing the use of the drug outside the hospitals arrangements were made with Drs. Moseley, Smith and Purchas to treat by Salvarsan 30 cases each in their districts without taking the patients into Hospital at all.

The results with special reports attached are very satisfactory as showing that the peasantry who suffer from Yaws can be treated in the ordinary way at their own homes without, apparently, any danger.

The suggestion was made by Dr. Moseley who has done a great deal in pushing the use of the drug in this disease and has shown a very praiseworthy example to others in the use of Salvarsan both in Yaws and in Syphilis.

There has been as far as is known, one death from Salvarsan which occurred at Port Antonio, on which for some reason or other, the Coroner did not see fit to hold an Inquest at the time the death occurred. On the matter coming before the Hon. Attorney General, however, he consulted with me and we agreed that an Inquest should certainly be held, and it was held although many weeks after the occurrence.

A Circular was in consequence sent out to all Medical Officers of the department directing them to report any such deaths that may happen in future "at once" not only to the Coroner but to this office as well.

If a Coroner does not see fit on any future occasion to hold an Inquest then the question can at once be referred to the Hon. Attorney General so that no delay may occur in the holding of an Inquest.

In the interest of Science all such deaths should be made as public as possible. Statistics cannot be of any value if such cases are not made public and recorded.

All deaths that may be attributable to Salvarsan treatment should also be specially noted in the Monthly Return sent up from the Hospital in which such death occurred.

During the year the ordinary district treatment of Yaws was discontinued from 9th June to 23rd August of the same year.

After the latter date one visit as in former days with subsequent distribution of medicine by the District Constables was allowed.

Mileage was given when 12 cases were seen.

Report on 30 cases of Yaws treated at their own homes, by Salvarsan, in the Port Antonio District.

Hon. S. M. O.

I have the honour to submit herewith a report on 30 cases of Yaws which were treated with Salvarsan at their own homes. 26 of these cases were given intramuscular injections at Moore Town on the 5th February. They were instructed to stay in bed for three days and apply poultices to the seat of injection in case of swelling or pain, also that they should keep any ulcers they had clean.

On the 5th March 16 of these cases had lost all symptoms of the disease, that 53% were apparently cured after 28 days.

On the 20th March 8 more cases were cured—4 of these had not appeared for inspection on the 5th and were probably cured then—They would have brought the total of cured after 28 days to 66%. Of the remainder one case was discharged on the 26th March; the other a child suffering from anti Yaws is not quite well yet, due no doubt to having received too small a dose.

Case No. 27. E. M. had been in the Hospital for 66 days in 1911 with an ulcer. He had received a dose of Salvarsan then. This attack was probably a reinfection.

Cases 28, 29 and 30 were injected on the 14th March and seen on the 11th April when they were free from symptoms.

The number of days necessary for a cure would undoubtedly have been greatly lessened if the cases had been seen daily as in a hospital and discharged as soon as cured.

The cures were remarkably rapid when the period during which the patient suffered is taken into consideration. No. 6, I. O., a man aged 30 years suffering from crab yaws was unable to work and could scarcely walk, had suffered, so he states, for 20 years, was practically cured in 28 days and quite in 43 days. The average length of sickness was over 3 years while the average time in recovering after Salvarsan was just over one month. On each visit to Moore Town I was met by a large number of people ranging in age from over 50 to children in arms, they or their parents wishing to know when I would give them a dose. Simply in consequence of the rapid cures they had seen.

The only difficulty in the way of completely eradicating the disease by this method lies in the fact that there are many cases scattered in the back lands whom it would be practically impossible to visit in their own homes (it would be a day's work to visit one such case and there are quite a number of them); but unless these are treated they are liable to keep the disease going. When I visited Moore Town several such cases were brought to me but it was impossible to inject them as they had to walk back several miles over very rough country.

Except the Government erects a temporary shelter or provides conveyance (e.g., a mule) to take these cases back home, they are bound to remain a menace and must nullify the idea of finally stamping out the disease.

On account of the distances to be travelled the latter suggestion is scarcely practicable.

From my experience I would suggest that a certain centre be taken (e.g., Moore Town). From this centre one could visit the neighbourhood and inject as many as possible in their own homes, at the same time, a tent or temporary building should be erected at the centre when those whom it is impossible to visit could be brought. These could be dosed and kept for a few days; if they are unable then to provide conveyance on account of poverty, a small sum, probably never more than a shilling would serve to hire the necessary conveyance to take them home. By this method there would only be a small extra cost per head and the time taken to dose a whole district would be little if at all lengthened. No untoward consequences followed the injections. One case had a small patch of necrosis at the seat of injection and one was slightly jaundical a few days after the injection. The jaundice has now cleared up however, and had probably nothing to do with the injection.

J. G. MOSELEY, Asst. D.M.O.
14/4/14.

Report on the treatment by Salvarsan of 30 cases of Yaws at their own homes in the Ulster Spring District.

Ulster Spring, March 30th, 1914.

Sir,

With reference to your letter 49/89 dated January 12th, 1914, I have the honour to attach form No. 4566 with the results in thirty cases of Yaws treated with Salvarsan.

The treatment was undertaken without hospital facilities in all cases and was uniformly successful.

All injections were intragluteal.

A slightly alkaline solution was always used being the one which, in my opinion, is followed by the least pain.

In four instances it was found necessary to repeat the injection after about three weeks as the disease was not quite cured by the first; in each case the repeated dose was promptly followed by relief.

There were no deaths nor was there any cases in which the severity of the symptoms after the injections justified fear of it.

High temperature and rigors were noted in a case in which the eruption was extensive and recent.

Twenty of the cases were treated at their homes and ten at my dispensary, the latter returned home after several hours rest. Some walked others rode, the greatest distance being eight miles. No special inconvenience was noted after the journey.

In order to widen the scope of the experiment as much as possible some old cases were taken, the oldest being one in which the injection was of four years standing, the man was unable to walk and had been made a pauper. After fifteen days he appeared quite cured and has since been taken off the pauper roll.

The treatment necessitates much travelling in order to reassure the patients, for on or about the third day there is pain and swelling at the site of the injection associated, in most cases, with a slight rise of temperature. This alarms the relatives although I took care to warn them in each case.

The youngest patient treated was two years old. Hospital accommodation may be necessary for the very weak in order to facilitate supervision.

I experienced no difficulty in getting people to submit to the treatment. Several persons offered themselves after my list was closed.

If the injections are to be continued it would be best to get tubes containing half or quarter the amount in the present supply as a large proportion of the cases are in children.

From the above I conclude that the treatment of Yaws by Salvarsan would be very much more certain of good results than the old treatment. Not only is this the case with respect to the patient himself but it saves his neighbours.

It is noticed that an imported case in a certain section of the district is often followed by a crop of other cases. If the first few cases were quickly cured the risk of infection to the healthy would be appreciably decreased.

I have, etc.,

EYRE SMITH, D.M.O.

Report on thirty cases of Yaws treated by Salvarsan in the Duncans District of Trelawny during the months of February and March, 1914.

These cases were selected from cases seen in the villages of Stewart Town, Jackson Town, Clarks Town, Kinloss and Duan Vale, and were the most serious cases seen—nearly all were children—as stated in my return. Some of these cases were of a very severe type. One child had large ulcers between the buttocks exuding a most offensive discharge. Six days after injection these ulcers had healed and the yaws on the other parts of the body were drying up.

The results in all cases were excellent and the opinions of the mothers and fathers concerning the use of the drug soon changed from one of aversion to complete belief in its usefulness.

Only in one case was there much constitutional disturbance, i.e., fever sweats, but these symptoms soon passed off.

The people as a whole are very pleased with these results: and I do not anticipate any trouble about using the drug. Cases should however, be selected—there are many children who appear to be hovering between life and death but with no definite disease—these are the most dangerous cases to treat.

F. A. G. PURCHAS, D.M.O.
17.4.14.

Yaws Return without Salvarsan Treatment, 1913-14.

Parish.	District.	D.M.O.	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th
St. Andrew	Stony Hill	Dr. L. Crooks	34	..	..	..	..	..	..	..	..	..	..
do	Gordon Town	Dr. C. E. Sharp	214	54	52	..	..	..	..	..	..	..	..
St. Thomas	Morant Bay	Dr. T. M. Bartlett	214	87	29	16	1	..	..	..	..	..	..
do	Plantain Garden	..	..	..	..	..	..	..	..	..	..	..	..
do	River	Dr. F. R. Evans	172	52	..	..	..	..	..	..	..	..	..
do	St. Davids	Dr. A. T. Clarke	713	173	140	207	103	..	..	..	..	..	..
Portland	Manchioneal	Dr. T. A. Dryden	385	273	..	..	..	..	..	..	..	..	..
do	Port Antonio	Dr. J. G. Moseley	215	..	..	..	..	..	..	..	..	..	..
do	Buff Bay	Dr. H. J. George	344	173	48	..	..	..	..	..	..	..	..
St. Mary	Annotto Bay	Dr. H. Joslen	244	113	19	..	..	..	..	..	..	..	..
do	Richmond	Dr. Ritchie	596	39	1	..	..	..	..	..	..	..	..
do	Gayle	Dr. C. S. Gideon	655	370	235	122	20	..	..	..	..	..	..
St. Ann	St. Ann's Bay	Dr. A. E. Myers	19	15	..	..	..	..	..	..	..	..	..
do	Moneague	Dr. A. G. Curphey	5	2	..	..	..	..	..	..	..	..	..
do	Cave Valley	Dr. G. Hargreaves	70	54	14	..	..	..	..	..	..	..	..
do	Dry Harbour	Dr. W. E. Wilson	35	37	36	32	32	12	12	..	..	..	..
Trelawny	Falmouth	Dr. G. P. Campbell	19	68	..	..	..	..	..	..	..	..	..
do	do	Dr. A. E. Myers	11	2	2	6	..	..	5	..	..	..	..
do	Duncans	Dr. F. A. G. Purchas	116	43	45	..	..	..	..	..	..	..	..
do	Ulster Spring	Dr. E. V. Smith	64	83	55	30	7	2	..	..	..	..	..
do	do	Dr. G. E. Cheyne	80	3	29	14	9	1	..	..	..	..	..
St. James	Adelphi	Dr. Johnston	78	39	14	36	17	14	10	6	14	5	..
do	Montego Bay	Dr. G. W. Thomson	441	393	96	..	..	..	..	..	..	..	..
Hanover	Lucea	Dr. F. H. Cooke	360	108	130	122	128	109	88	46	27	10	5
Westmoreland	Little London	Dr. F. A. Sinclair	144	..	..	15	..	..	..	..	..	..	..
do	Sav-la-Mar	Dr. C. E. Harvey	79	14	..	..	..	..	..	..	..	..	..
do	Lamb's River	Dr. R. G. Sherlock	289	162	25	..	..	..	..	..	..	..	..
St. Elizabeth	Black River	Dr. C. Farquharson	38	..	..	..	..	..	..	..	..	..	..
do	Balaclava	Dr. W. Lofthouse	229	155	124	..	..	..	..	..	..	..	..
do	Santa Cruz	Dr. J. A. L. Calder	37	..	..	..	..	..	..	..	..	..	..
Manchester	Newport	Dr. M. M. Meikle	38	59	65	9	1	..	..	..	..	..	..
do	Mile Gully	Dr. Farquharson	140	79	15	61	67	..	..	..	..	..	..
Clarendon	Crofts Hill	Dr. H. T. Strudwick	122	109	70	61	37	21	16	6	2	1	..
do	Four Paths	Dr. E. R. C. Earle	62	51	16	14	24	..	..	..	..	..	..
St. Catherine	Spanish Town	Dr. J. H. Peck	17	32	23	7	..	..	..	..	..	..	..
do	Old Harbour	Dr. F. O. Simpson	362	101	66	..	..	..	..	..	..	..	..
do	Linstead	Dr. L. M. Clark	166	..	..	..	..	..	..	..	..	..	..
			6,807	2,943	1,349	752	446	159	131	58	43	16	5

Two Reports on cases of Yaws treated by 606 in the Port Antonio Hospital since such treatment was first started.

Hon. S.M.O.,

In view of the interest aroused by the description of 43 cases of Yaws and Syphilis treated in the Leeward Islands by Salvarsan I take the opportunity to give a short resume of the work done in the same direction at the Port Antonio Public General Hospital, which I consider compares favourably with the former.

Salvarsan was first given at this Hospital in May, 1911; up to the present the following cases have been treated.

(a) Cases of Yaws—494. Of these 466 have had one dose only, 25 have had two doses, 2 have had three doses, 1 has had four doses.

(b) Syphilis—104. 95 have had only one dose, 9 have had two doses, making a total of 598 injections.

The average number of days spent in hospital for an apparent cure was—Yaws 28, Syphilis 22.

The average for both would have been shorter were it not that patients with large ulcers have to be kept until they are completely healed, often a period of several months.

At this Hospital there is no means of isolating the cases but we have not found any harm resulting. The only case suspected of being infected there was a male coolie, but as extremely few Yaw cases are ever in the coolie ward, this cannot be taken as an argument against their admission.

Salvarsan is given as early as possible with the idea of shortening the infective period and the ulcers are dressed antiseptically with a mercurial ointment.

Several methods of administering the drug have been tried

(a) *Intravenously*—By injection of neutral solution in saline. This is the least painful and in acute cases where rapid action is desired, undoubtedly the most efficient. In Chronic cases the intra-muscular is of quite as much service.

(b) *Intra-muscularly*—

(1) By neutral solution in saline. A very painful method, causing a great deal of swelling

(2) By emulsion in Olive oil. This is the method most commonly used.

(3) By emulsion in Glycerine and saline.

This method described in the Lancet of the 6th instant has lately been tried and appears to be somewhat less painful than the olive oil method.

The intra-muscular method has the advantage that the syringe and needle are easily sterilized, which is a great advantage where several consecutive patients have to be injected.

The cases of recurrence are mostly due to the breaking down of scar tissues from old ulcers, but cases of primary Syphilis as well as acute Yaws which have been treated by Salvarsan do very occasionally recur; all the cases up to the present requiring more than two doses come under the former category.

Patients are now discharged from Hospital as soon as possible after injection, some the next day: this never causes any trouble and goes to show that the injections could be made at their homes without any difficulty.

Scarlet Red ointment has been found helpful in healing the chronic indolent ulcers.

J. G. MOSELEY,

Asst. D.M.O.
29/12/14.

Hon. S.M.O.,

In continuation of the foregoing the following numbers have reference to the persons injected with Salvarsan since the 29th December last.

(1) Cases of Yaws—110. Of these 106 have had one dose only, 4 have had two doses.

(2) Syphilis—17. Of these 16 have had one dose only, 1 has had two doses.

The total stands as follows:

(1) Total cases of Yaws—604. Of these 572 have had one dose only, 29 have had two doses, 2 have had three doses, 1 has had four doses.

(2) Total cases of Syphilis—121. Of these 111 have had only one dose, 10 have had two doses.

A total of 725 injections have been given in the hospital. Dr. J. G. Moseley has given thirty persons Salvarsan under the special arrangement sanctioned by the Governor, and six private patients have been treated, making a total of 761 injections since May, 1911.

One death unfortunately occurred within an hour of receiving an intra-muscular injection of 4 grammes in the gluteal region; the Salvarsan having been made up into an emulsion with sterilized olive oil. The patient, a girl of 14, had been under treatment on two or three previous occasions in the Hospital for Yaws in some one of its various manifestations. She presented herself along with nine others whose ages varied from 5 to 50 years. She appeared to be as suitable a subject for treatment as any of the other nine. She had a large rapidly spreading ulcer of the right leg—a characteristic Yaws ulcer.

She expressed a desire to be treated with Salvarsan, she was given the dose, she made no complaint for pain or other inconvenience at the time of the injection, on her way to the ward she had a fainting attack. She was put to bed and simulants (Spts. Ammon. Arm) given to her, she appeared to have quite recovered from the attack, when on sitting up to drink some milk about a half hour subsequent to the first attack, she suddenly collapsed and died.

The Post Mortem Examination revealed no special cause to account for the death, no blood vessel had been injured so that the question of embolism was dismissed. She was emaciated and appeared to be suffering from cachexia the result of Yaws, but in no worse condition than dozens of others who have been treated with Salvarsan both before and since this occurrence.

I may mention the death was immediately reported to the Coroner and an Inquest was subsequently held, when the jury returned a verdict of "Death from mal-nutrition and syncope," a rider was added that patients should be more carefully examined before receiving a dose of Salvarsan.

No amount of previous examination would have revealed the fact that this unfortunate girl was so susceptible to painful impressions as to produce fatal shock after so simple an operation. That Salvarsan injections are exceedingly painful there is no question, but the amount of disturbance it produces is altogether pendant of the patient's susceptibility to painful impressions; some pale and cachetic people stand it without a murmur, while others who are strong and robust seem to suffer severely.

One death in 761 injections is a small percentage, even when the most extreme view is taken of the matter, think of the number of deaths that would have occurred among those people and the amount of suffering and permanent deformity that would have occurred if Salvarsan had not been used. Although it is by no means a perfect remedy yet it is by long odds the best remedy we have for the disease for which it is used.

It is true now and then relapses occur particularly in the chronic cases but the number is small compared to the number permanently benefited. It is also true that trouble now and then arises in the shape of an abscess at the seat of the injection and sometimes patients become jaundiced, but compare all this to the horrible deformities that resulted from the untreated disease, the consequent loss to the state of what would probably be useful citizens, think of the years and years of suffering that some of those unfortunates go through. To my way of thinking anything that promises relief would be welcome to the person who has the true interests of the sufferers at heart.

Of the above 24 were still under treatment at the end of the financial year, the remaining had been discharged cured of their symptoms.

The average stay in hospital before the patient was considered cured was as follows:—

Yaws—23 days.

Syphilis—24 days.

No record was kept as to the number of injections given by myself and the number given by the Assistant District Medical Officer.

C. A. MOSELEY,
D.M.O.
13/4/14.

Return of cases of Yaws treated with Salvarsan in the several Public General Hospitals and Medical Districts during the year beginning April 1st, 1913 and ending on March 31st, 1914.

		Number Treated.	Number Cured.	Number remaining under Treatment.
In Hospitals	..	788	739	49
Poor House St. Ann's Bay	..	14	13	1
In Districts	..	90	88	2
Total	..	892	840	52

LEAFLETS ON CONSUMPTION.

The following leaflet has been distributed to the various Medical Officers of the Department with the request that they would distribute them to their patients.

PREVENTION OF CONSUMPTION.

Consumption is an infective and preventable disease and is known by the cough and wasting that it produces.

Thousands die every year.

It is spread chiefly by inhaling the spittle or phlegm of Consumptive persons which has been allowed to dry and float in the air as dust.

The spittle or phlegm contains the germs which cause the disease.

Persons who suffer from consumption should spit into a cup or pocket spittoon containing a little antiseptic solution (such as Carbolic, Jeyes or other solution), or into pieces of paper that should be at once burnt.

The spittle in the cup or spittoon must be burnt at least once a day, or buried under the earth. and the cup or spittoon thoroughly cleansed with water which is absolutely boiling.

For wiping the mouth, a piece of rag or paper should be used instead of a handkerchief and afterwards burnt.

If handkerchiefs are used, they should be put into boiling water or into a disinfectant solution, before they have time to become dry.

All soiled bed and body linen should be disinfected in the same way.

The following are good disinfectants:—

Carbolic—1 part in 20 of boiling water (1 oz. to 1 pint).

Jeyes—1 part in 160 of boiling water (1 drachm to 1 pint).

Cyllin—1 part in 320 of boiling water, ($\frac{1}{2}$ drachm to 1 pint).

People who suffer from consumption or cough should never swallow their spittle.

Recovery from consumption is not uncommon with plenty of fresh air and good food.

Intemperance tends to aggravate the disease.

No consumptive should live in a crowded room as other persons may become infected; they should be moved elsewhere.

All rooms should be well ventilated.

All windows should be kept open day and night, the night air does no harm, provided there is no draught.

The floor, furniture and room should be cleansed every day.

In cleansing, do not stir up the dust, but use wet dusters or cloths. Afterwards boil the dusters or cloths so as to disinfect them.

Persons suffering from consumption should have separate beds and should not sleep in the same room as healthy persons, and should not kiss or be kissed on the mouth.

All milk should be boiled and meat well cooked.

Flies and their breeding places should be got rid of.

On removal or death, give notice to the Local Board of Health so that the room and its contents may be thoroughly disinfected.

For advice, ask the Doctor or Sanitary Inspector.

NEW LAWS.

During the spring meeting of Council two Laws—The Quarantine Amendment Law and the Yaws Compulsory Treatment Law were introduced into Council.

1. QUARANTINE AMENDMENT LAW.

This Law was introduced with a view to having some sections passed that were dropped last year when there was a desire to bring Council to an early conclusion.

The Law provided for the system of "Surveillance" of passengers instead of "Observation" in a quarantine station.

In fact the provisions in that matter were much the same as were the provisions in Law 32 of 1905 which Bill is now a dead letter.

This Bill was brought in to some extent as the result of communications that passed between Sir George Le Hunte Governor of Trinidad, the Rt. Hon. the Secretary of State for the Colonies, and the late Governor of Jamaica.

With the sanitary arrangements of this island in a not very first class condition, due, to a great extent, to lack of funds and neglect in past years, it is not surprising that the Elected Members objected to the Bill.

As has often been stated before the exports of this Island are mainly sent to the United States and should Plague unhappily ever gain admission to Jamaica it is very difficult to say how this Island would fare. Were our bananas all taken by England the advent of Plague would be a matter of comparatively small import, but as long as this British Colony is allowed by the Mother Country to depend so largely on the United States of America for Revenue and for the sale of its agricultural products it is bound to carry on such strict quarantine arrangements as will be least likely to endanger its trade with the States; and, in consequence, the shipping of the Mother Country must be considered a very secondary matter. Perhaps Great Britain could manage to take more of our bananas instead of the large number of Costa Rican and Colombian bananas that she now buys.

During the passage of this Law through Council the Hon. H. A. L. Simpson requested that the appointment of a Port Health Officer at Port Antonio might be made and the Hon. D. A. Corinaldi requested that the same might be made for Montego Bay—these appointments were subsequently provided for on the Estimates. £450 being allowed for the Port Antonio appointment and £150 being allowed for Montego Bay.

2. THE YAWS COMPULSORY TREATMENT LAW.

The Law was first introduced as a Compulsory Treatment by Salvarsan Law but in its passage through Council, due to a great extent to the suggestion of the Hon. Member for Kingston, the Law went through a good deal of change and emerged as a Bill for the compulsory treatment of Yaws, no special treatment being mentioned so that any new drug may be used if necessary or convenient.

A sensible amendment was suggested by the Hon. Member for Kingston to the effect that any one refusing treatment may be arrested and treated.

This was practically the same clause as one that was suggested in the original Bill and which was not allowed to appear as being too stringent a measure.

As far as is known, Jamaica is now the first British Colony to "enforce" any special treatment for Yaws and it is to be hoped that a few years may wipe out the 8,000 or more cases known of at present and all others not known of.

The reason a bill such as the above was found necessary was due to the very unsatisfactory results shown by the present mode of treatment. For instance for three successive years the average number of cases seen a first time has been about 8,000 (during this period no treatment took place during two months). One may well ask whether there is never to be a diminution in the number of new cases, and whether the money now paid for treatment is not to a great extent wasted. Some of the returns sent in have not been at all satisfactory, large numbers of cases being, in some cases, reported as having been seen but results or records being unsatisfactory.

PELLAGRA.

During the year under review the long expected visit of Dr. Louis Sambon took place.

Dr. Sambon arrived on September 18th, 1913, from the United States accompanied by Captain J. F. Siler, M.D. (Medical Corp, U.S. Army) of the Thompson-McFadden Pellagra Commission which is making its investigations in South Carolina, U.S., with Spartanburg as its headquarters, Mrs. Siler and Mr. A. H. Jennings, Entomologist on the Staff of the Bureau of Entomology, U.S. Department of Agriculture, and a Mr. Schwarz, an expert photographer.

The Commission left the Island on September 29th.

During the visit a number of cases of Pellagra were seen in different parts of the Island—the greater number were of course to be found at the Asylum.

Others were seen at the Union Poor House in Kingston.

Captain Siler kindly left at the Asylum some samples of cards on which he was in the habit of recording his cases, which cards should be of great use in following up the history of Pellagrins.

On Thursday September 25th the Commission started on a motor car tour through the Island to investigate—the first case seen was a small child on Mount Diablo close to the turning that leads to Hollymount. This case was discovered owing to the breaking down of the motor—several other cases were seen on September 26th at Chester Castle where the Commission asked a woman to go out into the bush and collect as many children as she could, some 40 or so children being brought out for inspection.

Others were seen in the Sav.-la-Mar Poorhouse on the same day, and others at the Santa Cruz Poorhouse on September 27, while a large number were found at the Mannings Home, Southfield, and were examined on the morning of September 28th.

There is no doubt that the visit of this Commission has had the effect of stimulating interest in a disease that had presumably been overlooked and cases are now being reported that previously might have been called by some other name.

By arrangements with Dr. Williams, Superintendent of the Asylum, all deaths of persons who have died of Pellagra will be reported so that the Pathologist may see the Post Mortem Examinations and take such specimens of the various organs as he may desire to examine.

It is to be hoped that the cause and means of transmission of the disease may be discovered—at present there are various theories on these points but we do not appear to have got further than the "theory" stage.

DIET SCALE OF PUBLIC GENERAL HOSPITALS.

The following changes were introduced into the Diet Sheet of the Public General Hospitals during the year under review:—

1. Additions to the present list of extras—

- | | | |
|--|----------|-----------|
| Rice | 3 ounces | allowed.. |
| Arrowroot | 3 | " " |
| Oatmeal | 3 | " " |
| Sago | 3 | " " |
| Beef tea one or two pints (12 ounces of meat to the pint) instead of bovril. | | |
| Fresh Fish (when procurable) 8 ozs. | | |

2. Increases in the amount of extras allowed—

- Sugar—may be increased from 1 to 3 ozs. per day
 Milk—may be increased from $\frac{1}{2}$ to 1 pint
 Eggs—may be increased from one or two (as formerly allowed) to such number as may be ordered by the Medical Officer—his initials to be affixed daily to the Diet Sheet.
 Condensed milk—One tin instead of being added to three pints of water will for the future be mixed with sufficient water to make up 3 pints.

3. Milk Diet—

Cows milk may be used in Milk Diet when it can be obtained "pure" and at a cost not greater than the price of condensed milk.

ACCOMMODATION FOR STAFFS OF HOSPITALS.

One great drawback in the management of Hospitals is the almost complete absence of accommodation for nurses, wardmaids and such employees.

During the last few years, Chapelton, Buff Bay, the new Port Maria, Lionel Town and Mandeville Hospitals have had additions made in this respect, the best being those at Chapelton.

NEW WORKS AT PUBLIC GENERAL HOSPITALS.

Leper Asylum.—Flyproofing of the Matron's, Superintendent's and nurses quarters, also of the Infirmary.

Morant Bay.—Screening of the Dispensers and Matron's quarters, Mortuary and latrines.

Hordley.—Screening of nurses and porter's quarters and of some windows of the Upper Male Ward. Erection of double doors to wards. Erection of a concrete sink in Underbuilding ward.

Buff Bay.—Completion of two new male wards and of the Operating room.

Annotto Bay.—Installing of eight windows in the Underbuilding ward. Flooring of Underbuilding ward. Erection of mosquito netting in connection with Nos. 1, 2, 3 wards.

Port Maria.—Partial erection of an entirely new hospital about a mile out of the town on a site selected by Sir Sydney Olivier. Two male wards, isolation wards, kitchen, laundry, nurses' rooms, outhouses and stores, Matron's and Dispenser's quarters.

St. Ann's Bay.—Flyproofing of the latrines.

Lucea.—Concreting the floor of the Underbuilding. Erection of a new office, dispensary, clothes store with verandah attached; also laying down of concrete drainage in connection with the above.

Sav.-la-Mar.—A. Erection of 3 wards to hold altogether 40 extra beds.

B. Addition of latrines, bathroom and lavatory basin to each of the three large wards.

C. Erection of a clothes room, nurses' room, dispensary and laundry and isolation wards.

Lionel Town.—Erection of—A. (1) A three warded flyproof isolation block with latrines and bath-room also nurses room attached;

(2) An Operating room with a small ward on either side.

(3) Two nurses rooms.

(4) A cesspool with pump for liquid sewage.

B. Laying down of concrete behind the latrines.

C. Enlargement of storerooms.

D. Erection of an Airmotor pump and tank in connection with a new well.

E. Sinking of a new well behind the Matron's Quarters (66 feet deep). The water has been analysed by the Bacteriologist and found to be of good quality.

F. Erection of a new boiler.

Linstead, Black River, Montego Bay, Cave Valley, Mandeville, Port Antonio, Chapelton, Spanish Town, Falmouth.—No New Works.

RETRENCHMENT.

During the financial year under review owing to a hurricane having taken place in the November of the year 1912, the Medical Department was called upon to retrench after the Estimates had been passed in Council, with the result that money had to be saved by keeping Ulster Spring Hospital closed. and by cutting down such items as Instruments, General Services (Furniture and repairs) and Equipment

OUTPATIENTS DEPARTMENT CONNECTED WITH THE HOSPITALS.

The Returns from the various Hospitals are as follows:—

<i>Hospitals.</i>				<i>Number seen.</i>
Morant Bay	..	...	..	577
Hordley	..	..	..	189
Port Antonio	..	..	..	9
Buff Bay	..	..	..	324
Annotto Bay	..	..	..	615
Port Maria	..	..	..	612
St. Ann's Bay	..	..	..	972
Cave Valley	..	..	..	25
Falmouth	..	..	..	624
Montego Bay	..	..	..	1,231
Lucea	..	..	..	1,451
Sav.-la-Mar	..	..	..	206
Black River	..	..	..	1,409
Mandeville	..	..	..	293
Chapelton	..	..	..	577
Lionel Town	..	..	..	648
Spanish Town	..	..	..	1,122
Linstead	..	..	..	1,009
				11,893

Return showing the number of patients treated under the Ticket System.

<i>Parish.</i>	<i>1/</i>	<i>2/</i>	<i>3/</i>
Kingston	.. 587	156	..
St. Andrew	.. ..	12	..
St. Thomas	.. ..	17	..
Portland	.. ..	64	4
St. Mary	.. ..	54	3
St. Ann	.. ..	46	..
Trelawny	.. ..	9	..
St. James	.. ..	6	..
Hanover	.. 3	3	..
Westmoreland	.. 12	144	1
St. Elizabeth	.. 5	7	..
Manchester	.. 1	43	1
Clarendon	.. ..	..	..
St. Catherine	.. ..	3	..
	608	564	9

In speaking of "Cheap and Easy" Medical advice, attention must be called, as has been done on several occasions before, to the "Mileage Charges."

A patient needs to see a doctor; he lives say 10 miles away from a doctor's residence—he can afford

to pay 2/ or 3/ for a Relief Ticket and nothing more—but the doctor is entitled to 1/6d a mile mileage fee as well according to the Tariff. In addition therefore to paying 2/ or 3/ for a Relief Ticket the person requiring medical attention may be called upon to pay another 15/ mileage charges, should he happen to live 10 miles from the Doctor's residence.

DISTRICT PATIENTS SEEN.

The Returns are as follows for the present and the two previous years:—

	1911-12.	1912-13.	1913-14.
Constables ..	2,932	2,838	2,520
Prisoners ..	2,913	3,780	4,898
Paupers ..	9,517	11,914	10,918
Immigrants ..	19,351	16,027	23,346
Par. Midwifery cases ..	114	77	122
Casual Paupers ..	9,398	10,529	9,231
Coolie Midwifery cases	23	21	31
	<u>44,248</u>	<u>45,186</u>	<u>51,066</u>

HOOKWORM INFECTION.

During the year specimens of stools have been sent up to the Island Bacteriologists from many of the "Hospitals" for examination.

The results are as follows as taken from the Hospital Annual Reports:—

Hospitals.	No. Examined.		No. found infected.	
	Coolies.	Creoles.	Coolies.	Creoles.
Morant Bay ..	..	10	..	..
Hordley ..	176	6	125	4
Port Antonio ..	..	..	..	..
Buff Bay ..	243	22	209	20
Annotto Bay ..	20	6	19	5
Port Maria ..	124	3	116	3
St. Ann's Bay ..	..	107	..	69
Cave Valley ..	..	34	..	19
Falmouth ..	2	113	2	70
Montego Bay ..	112	84	82	57
Lucea ..	24	2	24	2
Sav.-la-Mar ..	..	..	..	..
Black River ..	..	123	..	63
Mandeville ..	..	63	..	43
Chapelton ..	..	106	..	49
Lionel Town ..	335	154	189	55
Spanish Town ..	116	7	97	7
Linstead ..	20	116	17	89
Totals ..	<u>1,172</u>	<u>956</u>	<u>880</u>	<u>355</u>

Dr. Peck, as last year, had a consistent ocular examination of the stools of short term prisoners made at the Spanish Town prison. The results are as follows:—

Total cases examined ..	2,578
Infections ..	1,292

The number of cases Thymolised at the various Hospitals is as follows:—

Hospitals.	Creoles.	Coolies.	Outpatients.	Total.
Morant Bay ..	7	70	..	77
Hordley ..	15	379	..	394
Port Antonio ..	149	397	50	596
Buff Bay ..	30	439	..	469
Annotto Bay ..	22	3,570	..	3,592
Port Maria ..	8	728	..	736
St. Ann's Bay ..	36	..	..	36
Cave Valley ..	9	..	1	10
Falmouth ..	47	2	..	49
Montego Bay ..	84	112	..	196
Lucea ..	56	34	..	90
Sav.-la-Mar ..	22	597	1	620
Black River ..	63	..	3	66
Mandeville ..	30	..	1	31
Chapelton ..	40	..	..	40
Lionel Town ..	45	315	..	360
Spanish Town ..	76	655	2	733
Linstead ..	87	18	4	109
	<u>826</u>	<u>7,316</u>	<u>62</u>	<u>8,204</u>

At some of the hospitals the District Medical Officers have time to examine the stools themselves and do so, but inasmuch as, in the larger hospitals the Medical Officers are much overworked the easiest way is to "Thymolise promiscuously."

Dr. Grabham examined 466 prisoners at the General Penitentiary in Kingston. Of this number 235 were infected with Hookworm.

SYNOPSIS OF HOOKWORM REPORTS OF DISTRICT MEDICAL OFFICERS.

Stony Hill.—The District Medical Officer knows on microscopic evidence of at least 150 persons who have suffered from Hookworm in the district. On ocular evidence he believes that not less than 60% of the agricultural population of the district of school age upwards harbour the parasite, and possibly this statement under-estimates the facts. The public have no idea of the widespread extent of the infection, no idea of the loss of working power—general and occasional—that it causes, of the steady sapping of the strength from a mild infection lasting for years, of the simple measures underlying its prevention (though personal co-operation is needed), and lastly of the wonderful benefit following adequate treatment. Either by itself as such or by reason of its weakening effect, hookworm disease is the cause of more illness in this district than all other diseases put together.

Lower St. Andrew.—Alms-House. All inmates are treated on admission for Hookworm. The number now suffering from that disease are those only who have just come in.

Hagley Gap.—No Hookworm disease known to the District Medical Officer.

Gordon Town.—No Hookworm disease reported.

Morant Bay.—19 cases of Hookworm infection have been ascertained, among which 4 may be considered cases of Hookworm disease.

Manchioneal.—No cases met with.

Golden Grove.—Three coolies suffering from Hookworm disease have been seen, and 126 coolies and 4 creoles only have the worm.

Hope Bay.—Two cases of Hookworm disease have been seen both from Fruitful Vale, but this cannot be taken as indicative of its prevalence or otherwise.

Buff Bay.—209 coolies, 20 creoles.

Port Maria.—121 coolies, creoles 45.

Gayle.—4 creoles.

Moneague.—In the opinion of the District Medical Officer judging from the appearance of many of the people Hookworm is prevalent in the district. It seems impossible to get the people to bring specimens of fæces for examination, and those we attempt to treat on clinical evidence refuse treatment when informed of the danger and inconvenience entailed. Not feeling sick in any way other than the general lassitude and weakness from anæmia, they are unwilling to go 10 miles to hospital at St. Ann's Bay for indoor treatment even when there is room there.

St. Ann's Bay.—The hospital returns show 107 cases supposed to be suffering from Hookworm, and 68 were proven infected. The District Medical Officer says about 70% of the people are affected with Hookworm. Poorhouse—3 cases of Hookworm.

Cave Valley.—69 persons known to be infected by Hookworm, some of these were extremely anæmic. After the administration of Thymol followed by iron the improvement was marked.

Brown's Town.—The medical officer in charge of the temporary dispensary is not aware of anyone suffering from Hookworm.

Falmouth.—72 persons are known to be infected.

Duncans.—No case of Hookworm known of.

Ulster Spring.—One case of Hookworm was met with.

Montego Bay.—The number of persons known to be suffering from Hookworm in the district cannot be given, but from examinations made of hospital patients the District Medical Officer thinks that 40% of the creoles is a very conservative estimate of those who are infected, both in town and country.

The coolies who have been in the district two years are free from infection, but among the last batch of immigrants there are still some whose fæces contain ova.

Adelphi.—The insidious progress of this disease and the absence of acute painful symptoms added to the deplorable ignorance of the matter which prevails result in but a very small proportion of cases finding their way to the Doctor. Many cases are recognised in patients consulting for other less important but more distressing conditions. The way a native will neglect a Gonorrhœa, ulcer or other condition so long as it does not produce acute suffering, gives us to realize that it is useless to hope that either

(a) the people will take voluntary steps to prevent the spread of infection or

(b) pay for medical treatment so long as they don't feel too bad even when they are taught the casual relationship between "ground itch" and "bad worms."

There are thousands of cases in the district but the District Medical Officer only had the opportunity of treating 124 cases in the year under review.

At one school at which he vaccinated more than half of the children were definitely anæmic, and several presented extreme anæmia. He spoke to them all about the disease and told them and the Teacher to speak to the parents about it, but hardly necessary to note, not one case has applied for treatment.

Lucea.—Cannot give exact figures but in some localities full 20% have the disease. 63 persons were thymolised in hospital as against 27 in the previous year.

Sav-la-Mar.—The District Medical Officer is unable to give figures with respect to this disease. Poorhouse. There are four known to be infected.

Grange Hill.—The District Medical Officer cannot give numbers. He treated 16 cases privately during the year and all coolies suspected are sent to hospital to be treated.

Little London.—No cases of Hookworm met with.

Bethel Town.—None met with. The District Medical Officer has in private practice.

Black River.—3 creoles.

Santa Cruz.—Poorhouse. 20 cases treated.

Balaclava.—The District Medical Officer shows on record only a few persons infected with Hookworm disease by microscopic examination, but this is because of the difficulty of getting specimens of excreta for examination. Out of seven cases examined microscopically 4 were found to be infected.

It was only in one case that a second specimen of excreta for examination after treatment with thymol, was obtained, and this showed very marked improvement, both with regard to his physical condition and the very much smaller number of ova detected.

Newport.—Number cannot be given.

Lionel Town.—It would be difficult to estimate the number of people suffering from Hookworm in the district. 197 coolies are known to be infected, but this must be a small proportion of the total number. The percentage of indentured coolies affected has been much reduced. 56 creoles gave a positive result on examination of the stools.

There is no doubt that the disease is widespread in the district.

Crofts Hill.—None known of.

Spanish Town.—Poorhouse. 72 infected.

Old Harbour.—The District Medical Officer says Hookworm does not occur to any appreciable extent, probably owing to the fact that there has never been any coolie labour imported into the district and that the soil is unsuitable for banana cultivation.

Linstead.—109 cases are known of.

Port Royal.—No cases known of.

LEAFLET REGARDING HOOKWORM.

The following leaflets have been widely distributed and the Circular letter was sent to Estate Agents.

HOOKWORM DISEASE—ANCHYLOSTOMIASIS.

Is a disease prevalent among the peasantry and labourers in Jamaica, chiefly among those who walk barefooted and barelegged. The disease is one which causes much ill health, rendering those who suffer from it unable to work on account of weakness which is often wrongly attributed to laziness. The chief symptom of the disease is "Anæmia" or weakness.

The cause of the disease.—The disease is due to worms which are parasites. The worms which are about half an inch long are called "Hookworms" because they have in their mouth end four claw like hooks by which they attach themselves to the inside of the bowels of any person in whom they live. A person may harbour hundreds of these worms.

The symptoms of Hookworm disease.—The worms suck up blood from the bowel of the person in whom they live; causing him to suffer from weakness or Anæmia due to the loss of blood.

A person suffering from Anæmia becomes weak, pale, depressed and unable to work, the face may also become puffy and the ankles and feet swell due to dropsy and such person often becomes very emaciated and frequently dies.

If the lower eyelid of a person sick of the disease is turned down it will be seen to be pale and whitish instead of red while the inner parts of the lips may be the same.

There are also other symptoms noticeable in a person who suffers from Hookworm disease; they are nausea, vomiting, pain over the pit of the stomach, indigestion, shortness of breath and palpitations of the heart. Some fever which is often mistaken for malaria may also exist.

Dirt Eating.—Some people who suffer from the disease contract the unnatural and dangerous habit of eating earth and mud and are consequently termed “*Dirt eaters.*”

A person may continue to infect himself by eating earth or mud that is infected with the parasite.

How infection is spread from person to person.—1. The female Hookworms when living in the bowels of an infected person lay large numbers of eggs which pass out of the body with the excrement.

The eggs when they are deposited on the soil either of yards or compounds round houses or on banana cultivation, cane patches, in the bush or elsewhere, especially where the soil is damp or muddy or where there are puddles, hatch out and the young of the worms lie about on the surface of the ground ready to attach themselves to the barefeet, legs or other exposed portion of any person who comes in contact with them.

The young of the worms having attached themselves to the exposed portions of a person's skin, enter the skin and in doing so give rise to irritation or inflammation or sore places and then working through the body gradually get into the bowel.

Ground Itch.—Many persons suffer from what has been called “ground itch,” that is inflammation or ulceration of the skin which is caused by the young of the worm and which usually affects the exposed parts, such as the feet, legs and hands.

2. Any person who after handling or digging the soil neglects to wash his hands before taking food may also become infected with Hookworm disease. The young of the worm enter the mouth if the hand which is soiled by infected earth touches it or if a soiled hand touches food that is being eaten or that is about to be eaten.

Carriers of the disease.—Every person who harbours the Hookworm does not of necessity suffer from Hookworm disease as the quantity of blood sucked up by the worms may not be sufficient to cause “Anæmia”—but a person who carries the worm in his bowels even in small numbers may cause other persons to become infected for the eggs which pass out of the bowels of one person with the excrement, if deposited on the ground and not covered over with soil will develop and may cause other persons to become infected.

How to prevent infection and how to destroy the Worms.—1. All yards round houses and compounds should be kept clean and bush cut down so that the sun may dry up all moist ground.

2. All puddles and all muddy places near houses should be filled up or drained.

3. All improper privies should be got rid of and sanitary ones provided.

4. If proper privies cannot be provided owing to the expense, a trench two or three feet deep or a pit should be dug and all excrement should be passed or thrown into it daily and every day such excrement should be covered over with fresh sun-dried earth so that the worms cannot develop; for to do so they need fresh air and moisture, neither of which they can obtain when covered over with dry earth.

Before one trench is quite filled in another should be dug.

5. No one should defæcate on the surface of the ground especially if it be moist or wet and shaded such as is often the case in banana plantations and in the bush, as the Hookworm needs fresh air and damp well shaded soil, and no person should defæcate into any spring, pool, pond or other water supply so as not to cause infection.

Every one should use a latrine, pit or trench for such purposes.

6. The hands should invariably be washed before eating or taking food and no person should ever touch, with a dirty hand, any food or utensil used to hold food or drink.

7. All fruit that has fallen on the ground or that has been picked up from the ground should be washed before it is eaten and all vegetables should be washed or boiled before being eaten.

8. No person should walk barefooted but shoes should be worn (and also stockings or putties if possible) so as to keep the feet and legs protected from the young of the Hookworm which lie on the surface of the ground.

9. Any person who is suffering from “Anæmia” or who is passing worms should consult the doctor at once.

ISSUED BY THE CENTRAL BOARD OF HEALTH, JAMAICA.
12.2.13.

HOW TO TAKE THE MEDICINES FOR ANÆMIA ARISING FROM HOOKWORM INFECTION.

Take one of the two purgatives to-night in water.

Take at 6 o'clock to-morrow morning half of the Capsules.

Take the other half at 8 o'clock the same morning.

Take the other purgative at 10 o'clock.

You should neither drink wine, rum, any alcoholic liquor nor castor oil after taking the capsules.

Come for more medicine until the doctor says you are cured.

Have a sanitary privy in your yard with a bucket in it.

Do not defæcate on the surface of the ground otherwise you infect the ground but always use the privy.

Do not walk barefooted, so that you may avoid contracting “ground itch” in your feet.

Wear shoes or boots and you will not suffer from “Anæmia.”

Island Medical Office, Kingston, 1913.

CIRCULAR No. 1581.

SIR,

You will doubtless agree with me that it is desirable that every effort should be made to ensure the maintenance of good health among the Coolies employed upon the various estates in Jamaica, and that the matter should receive early attention in view of the near arrival of a Commission appointed in India to investigate the conditions under which indentured immigrants live in Jamaica, a Commission

that will doubtless make very careful enquiries with regard to the health of the immigrants and the measures adopted in Jamaica for combatting two of the diseases which account for a very great percentage of the sickness among the indentured immigrants, namely, Malaria and Hookworm disease, I have therefore deemed it advisable to invite your consideration of the following preventive measures with a view to their adoption on the estates.

If the immigrant is kept in a good state of health it naturally follows that the work done by him will be the more efficient and he will not spend so much time on the sick list during which period he is a loss to his employer.

1.—WITH REGARD TO MALARIA.

It is most important that regular and systematic doses of quinine should be administered to the coolies on the estates. Every immigrant should be given a daily dose of five grains of quinine every morning.

A daily record of doses should be kept on each estate, showing that each coolie has had his dose regularly. The ground round barracks should be well bushed and kept bushed.

Pools and puddles should be filled in or drained and all other places in which mosquitoes can breed should be abolished.

The grounds should be kept in accordance with the Health Law (35 of 1910) and with the anti-mosquito Bye-Laws made under Law 35 of 1910.

2.—WITH REGARD TO HOOKWORM INFECTION.

(a) The first and most important necessity is the provision of proper and suitable latrine accommodation. This I understand has been arranged for, and the orders of the Medical Officers in charge of the estates given with regard to the proper keeping of these latrines should be strictly followed out.

The coolie should be compelled to use the latrines provided on the estates, and if he does so one chief cause of the spread of the Hookworm infection will be abolished, namely, the infection of the ground near and around coolie barracks.

Infection takes place chiefly through the exposed portion of the skin.

(b) The early treatment of all labourers suffering from Hookworm infection is necessary in order that the immigrants may not develop "Anæmia," which incapacitates them from work for some length of time, often ending in death, and financial loss to the estate owners.

Estate owners are therefore urged to give the Medical Officers in charge of the estates every help in investigating and treating disease and in procuring specimens of fæces of the labourers on the estates at such periods as they may be called for by Departmental Circular in order that occasional examinations may be made with a view to finding out which of the labourers harbour the worm and which are free of infection.

(c) When found to be infected the labourer should be dosed with Thymol under the directions of the Medical Officer and the earlier the treatment takes place the better for the health of the labourer.

(d) When a Medical Officer in charge of an estate reports the estate as being badly infected with Hookworm all labourers on such estate should be provided at the expense of the estate owner with shoes, and in all such cases Medical Officers will inform the Governor that such a course has been advised.

The wearing of putties or strips of oiled linen or cotton material round the legs below the knees is advisable where possible, and this also refers to labourers working on estates where cane is grown in order to prevent the frequent attacks of cane itch.

(2) The following regulations should be carried out:—

HOW TO PREVENT INFECTION AND HOW TO DESTROY THE WORM.

1. All yards round houses and compounds should be kept clean and bush cut down so that the sun may dry up all moist ground.

2. All puddles and all muddy places near houses should be filled up or drained.

3. All insanitary privies should be got rid of and sanitary ones provided as directed by the Medical Officer in charge of an estate.

4. No one should defæcate on the surface of the ground, especially if it be moist or wet and shaded, such as is often the case in banana plantations and in the bush, as the Hookworm needs fresh air and damp well-shaded soil, and no person should defæcate into any spring, pool, pond or other water supply so as not to cause infection.

EVERY ONE SHOULD USE A LATRINE, PIT OR TRENCH FOR SUCH PURPOSES.

5. The hands should invariably be washed before eating or taking food, and no person should ever touch, with a dirty hand, any food or utensil used to hold food or drink.

6. All fruit that has fallen on the ground or that has been picked up from the ground should be washed before it is eaten, and all vegetables should be washed or boiled before being eaten.

7. No person should walk barefooted, but shoes should be worn (and stockings or putties if possible) so as to keep the feet and legs protected from the young of the Hookworm which lie on the surface of the ground.

8. Any person who is suffering from "Anæmia" or who is passing worms should consult the doctor at once.

9. Where estates are infected with Hookworm disease or where a large number of the labourers are infected it is advisable that all coolies returning from labour should bathe their legs and feet in a solution of Jeyes fluid, carbolic cyllin or such antiseptic solution as may be prescribed by the Medical Officer in charge of the estate and of such strength as he may direct.

10. Where possible it is advisable to saturate the soil in the vicinity of trenches and latrines and the pathways leading to them with sea (salt) water which is now held to be most destructive to the Hook-worm and its ova.

Where estates are near the sea, the coolies should be encouraged to bathe in the sea.

I have the honour to be,

Sir,

Your obedient Servant.

J. E. KER,

Superintending Medical Officer.

SANITARY CONDITION OF ESTATES ON WHICH INDENTURED IMMIGRANTS ARE EMPLOYED.

The following reports from District Medical Officers in charge of Indentured Immigrants show the sanitary condition of the Estates.

MORANT BAY.

S. M. O.

In reply to your Circular 35 No. 978 dated 3rd April, I have the honour to report that the Sanitary conditions of the estates in my district where Coolies are employed are on the whole satisfactory.

The following are the Estates:—Belvedere, Brown's Gully, Lyssons and Nutts River.

Quinine is regularly administered.

The buildings in each case are placed with a view to the best drainage being obtained.

The type of latrines recommended a year or two ago were provided with safe guards which were found to be necessary, but I am bound to say Coolies will not use regular latrines.

T. BARTLETT,
D.M.O.
25/4/14.

HORDLEY HOSPITAL—GOLDEN GROVE.

S. M. O.

Re Circular 35 No. 978.

The general condition of the indentured coolies barraeks is good, most of them are well drained but there are two properties on which on account of the low lands (and being a wet parish) it is almost impossible to prevent pools of water collecting near the houses. This is best illustrated by imagining a herd of cattle (200) being driven over a road that has been under water for two days. The pools formed by their feet remain for weeks sometimes and form excellent breeding places for mosquitoes.

All the estates have latrines but recently I have noticed that they are being very little used. The Coolies object to the smell that comes from the pits which on account of their habit of using water is generally in a filthy state. It is difficult to suggest any kind of latrines that would suit a coolie as he does not believe in using one of any description.

I understand that Quinine is not administered regularly on all the estates.

F. R. EVANS, D.M.O.
18/4/14.

MANCHIONEAL.

S. M. O.

In reply to Circular 35 No. 978, I beg to state that the Sanitary condition of the estate under my charge is good.

Drainage around the barracks is carried off by trenches which are kept clean.

The barracks and latrines are white-washed frequently.

The latrines are of the pit system.

Malaria is scarce. There are no breeding places.

Quinine is regularly administered but there is always some difficulty in persuading the immigrants to take the tablets.

T. A. DRYDEN,
11.4.14.

PORT ANTONIO.

S. M. O.

I beg to submit the following report on the health of the indentured immigrants located on the several estates in my district.

Windsor.—This estate has the largest number of indentured immigrants located on it. The barracks were kept in good order during the entire year, they are well drained, special care having been taken to see that the trenches were kept clean. Substantial latrines are provided for the Coolies, they are frequently white-washed and kept in thorough order, they are to leeward and considerably below the elevation of the barracks.

Fellowship.—The barracks on this estate are built on a small hill rising out of the banana fields, they are well drained and were kept in good repair during the year.

Golden Vale.—The barracks on this estate are of two classes. One an old substantially built sugar house, this makes an excellent barrack although some of the rooms are a bit dark. The second lot of barracks are built on a small near by hill. These are carefully drained and have been kept in good order, and are provided with well built latrines.

Tom's Hope.—The Coolies on this estate have been in good health during the year. The barraeks here as on the other estates are built on a series of small hills rising out of the banana fields, the drainage is perfect. The latrines have given some trouble, in consequence of the pits becoming full of water during a rain, the ground being so impervious that the water does not escape from them. The location has been changed several times without any permanent benefit resulting. The Assistant District Medical Officer suggested that drains should be dug from the pits, the drains being filled in with stones and then covered with earth thus giving the water a chance to escape.

Red Hazel.—The immigrants belonging to this estate are located at Prospekt, comparatively few of them come to Hospital. The barraeks are well built, they are kept in good repair and the grounds are well looked after. The latrines are substantially erected buildings standing some distance from the barraeks.

Williamsfield.—The barraeks belonging to this estate are built on high ground along the main road. The buildings have been kept in good repair and well built latrines have been erected in connection with them. It is a matter for surprise that this estate furnishes a larger number of malingers than any other, it is surprising in view of the fact that the conditions in connection with immigrant life, are more favourable here, than elsewhere.

Bound Brook.—The lot of the Coolies on this estate is a happy one so far as coolie life goes. The barraeks are on high ground, they are well built, with latrines below and to leeward of them. Water is piped to within a short distance of the houses. They rarely come to the Hospital and generally speaking are above the average as regards their physical condition.

The above comprise the estates belonging to the United Fruit Company.

Cold Harbour.—The property of the estate of the late L. D. Baker, is situated on the main road towards Blue Hole. The immigrants on this property are well looked after, they are comfortably housed. The latrines are wattled structures, they serve the purpose but are not as good as those belonging to the estates referred to above.

Burlington.—Only a few Coolies are located on this property. The barraeks are well built with latrines attached.

There was a marked falling off in the number of coolies admitted to Hospital for Malaria during the past year. As has been mentioned elsewhere, it is difficult to account for this desirable condition of affairs. Quinine has been given regularly to the United Fruit Co's. Coolies and to those located on Cold Harbour, a five-grain dose twice weekly, the same thing was done during the year 1912-1913 when the Coolie admissions to Hospital nearly trebled those of last year. No special works were carried out in connection with draining or keeping the grounds round the barraeks clean as those two important things have always had careful attention. Some general condition has been operative, as the falling off in the admission rate to hospital on account of Malaria has been even more marked in the case of creoles. It would be a matter for congratulation if one could feel sure that it was due to the puny efforts that have been made towards mosquito eradication as in that case one could feel more or less sure of its permanency. This falling off without any sufficient apparent cause is odd, and one would do well not to be too optimistic as to its permanency.

Hookworm is still prevalent among the Coolies, although there are not wanting signs that gradual improvement is taking place.

Uleers are exceedingly common. A special report was written on this matter not long ago in connection with a return of the cases of malaria, etc., admitted to hospital during the December quarter last.

As mentioned in my report last year the use, by the United Fruit Co., of gasoline trucks to draw their bananas has in my opinion gone no short distance towards improving the health of the coolies. They are now able to finish their work within a reasonable time and it is not a matter of turning them out to work before daylight.

Malingering is a very serious matter and active steps should be taken to suppress it.

The death rate has been surprisingly low; of the 3,865 admissions to hospital only 6 deaths occurred, .65 per cent. or about 1 per cent. of the indentured coolie population.

C. A. MOSELEY, D.M.O.
15.4.14.

BUFF BAY.

S. M. O.,

I have the honour to acknowledge receipt of your Circular 35 No. 978 dated 3rd ultimo and in reply to say that the estates in my district where indentured labour is employed are all in a fairly sanitary condition. Open trenches surround the barraeks. These trenches are kept clean, no water being allowed to settle in them; the surroundings are kept clean of all garbage. The undergrowth is regularly bushed out and all vessels that may serve as receptacles for water are taken away.

Latrines.—The latrines on Low Layton and Paradise are built after a plan that was supplied from the Immigration Office. The barraeks on Mid Layton Estate are built within two or three chains of the sea, it was considered unnecessary to build latrines here.

I am unable to say if the Overseers regularly administer quinine to the indentured immigrants on the estates.

H. G. GEORGE, D.M.O.
4.5.14.

RICHMOND.

S. M. O.,

I have the honour in reply to your Circular letter to forward the following report on the sanitary condition of the barraeks and surroundings on estates employing indentured labour in this district.

Konnigsberg Estate.—Barraeks in good order, well situated and well drained. Surroundings always clean and sanitary—no malarial breeding places in the vicinity.

Latrine.—Trench screened.

Cape Clear Estate.—Barracks in good order, well drained but trenches sometimes overgrown in bush. Sluggish stream near barracks and when not clean, a breeding place for mosquitoes.

Latrine.—Unsatisfactory.

Hopewell Estate.—Barracks and surroundings in good general order. Compound sanitary—Barracks well placed and drained.

Latrines.—Satisfactory, trenches in sheds with ordinary latrine seats over them.

Esher Estate.—Barracks and compounds in good order, surroundings sanitary. *Latrines* clean, sheds with trenches and bars over them.

Charlottenburgh Estate.—Barracks and general conditions satisfactory and sanitary.

Platfield Estate.—Barracks excellent. Surroundings sanitary. *Latrines* open trenches, screened.

Montrose Estate.—Barracks in good order. Surroundings sanitary. This estate is in a rather malarial district.

Latrine.—Open trench screened.

Claremont Estate.—Barracks in good order. Concrete drains around them. *Latrine*—trench—not satisfactory.

Halcot Farm.—Barracks in fair order. Surroundings often untidy. *Latrine* not satisfactory—small trench.

On all estates quinine is administered but I doubt with regularity.

F. A. RITCHIE, D.M.O.
3.5.14.

PORT MARIA.

S. M. O.,

I have the honour to acknowledge receipt of Circular 35 No. 978 of the 3rd ult. re Sanitary Conditions of Barracks on Estates under my charge, and in reply to state the following:—

A. i. *Wentworth*.—Drainage round barracks good. Breeding places for mosquitoes—none. *Latrine*—moveable, covered, and in good condition.

ii. *Trinity*.—Drainage round top barracks good as they are on hill side, trenches round bottom barracks kept open, but land is clayey and therefore damp in wet weather.

No breeding places for mosquitoes. *Latrines*, moveable covered structures. Well built.

iii. *Brimmer Hall*.—Drainage perfect, site ideal. No breeding places for mosquitoes. *Latrines*—moveable covered structure. Well built.

iv. *Nonsuch, Tremolesworth & Unity*.—All under same management. Barracks all same type. Drainage and other sanitary conditions around barracks good. No breeding places for mosquitoes. *Latrines* are moveable structures but not covered, not a good type—to be replaced soon.

v. *Frontier*.—Barracks are well built and drainage around perfect—site ideal. *Latrines*—small moveable structures, well made.

Some months ago Anopheline larvae were found in stagnant water a stand pipe at entrance from the road. This was pointed out and stand pipe has been removed. No other breeding places for mosquitoes.

B. Instructions are given for administration of *quinine* at least twice weekly, but on Frontier estate daily administration has been ordered. I cannot vouch for the administration as being regular, but it is significant that the incidence of Malarial fevers among the immigrants shows a further reduction during the past financial year.

G. I. LECESNE, D.M.O.

4.5.14.

ANNOTTO BAY.

S. M. O.,

I have the honour to acknowledge the receipt of your Circular 35 No. 978 dated April 3rd, 1914, relative to the Sanitary Condition of the Estates under my charge where Coolies are employed.

Fort Stewart.—The Coolie barracks occupied by both the first and second term Coolies and free Coolies are old and dilapidated and generally are not in good repair. Those of Lower Fort Stewart have earth floors. Here, as elsewhere where the roofing is made with corrugated iron sheeting the Coolies complain that it is very cold at nights. They complain very strongly of this in nearly every instance and I think with justice for an iron roof makes a dwelling very hot during the day and very cold at night. An individual cannot sleep soundly if the body is not kept warm, and as the Coolies are in nearly every instance very lightly clad it follows that they complain that the cold keeps them awake. This is not a healthy condition and one which I think should be remedied.

Malaria is very prevalent.

Quinine is administered but not regularly I believe.

Latrines were provided here as on all the estates in this district but owing to the hopeless task of inducing the Coolies to use them they have not been kept up. It is the same on all the estates. I have repeatedly spoken to the overseers about it and they say that they have done all they can but they declare they cannot succeed in their attempts to induce the Coolies to use the latrines. I have also spoken to the Coolie headmen and the Coolies themselves about it and they promise to carry out my instructions but things remain as they are. The Coolies will make a filthy mess all round the latrines and one has in consequence to approach them cautiously but they won't go inside. They have prejudices about the use of latrines, which, owing to the necessarily scattered buildings used as barracks and their remote situations from the overseers and bookkeepers, they have great difficulty in surmounting.

Golden Grove.—There are two barracks here for the indentured immigrants, both in bad order. Concrete gutters have been laid down round the sides of them but they are not always kept as clean as they should be.

Latrines have been put up in the banana walks but are not used.

Quinine is administered but not regularly.

Iter Boreale.—The owner of this property has erected new Coolie barracks which are excellent dwellings and are without exception the best in the Annotto Bay district, and further, are model dwellings of their sort and may readily be taken as a pattern of how the coolies should be housed. Their situation is well chosen, being on a small rising exposed to the seabreeze and away from any swamp.

Latrines are provided.

Quinine is not administered regularly but is given freely.

Gibraltar.—The barracks here are old and in bad repair and those for the indentured immigrants do not conform to the model as laid down some time ago as the type of dwelling to be built for them.

The indentured immigrants complain very much of the *iron roofing*.

Latrines have been provided but are not kept up.

Quinine is administered but not regularly.

Lady Hole.—The barracks are in fair order, but are old. Their situation is not good.

Latrines have been provided but so far as I can see have never been used.

Quinine is administered regularly.

Osbourne.—The barracks for the indentured immigrants are in good order, clean and well drained.

Quinine is given regularly.

Fort George.—The barracks for the indentured immigrants are well situated, with good drainage and have healthy surroundings.

Gray's Inn.—The barracks here are admirably situated as regards drainage and being placed on rising ground well above and away from swampy land are healthy.

Quinine has been administered regularly and assiduously.

Latrines well built and kept up and the overseer of this estate did all in his power to get the Coolies to make use of them but his efforts have not met with much success.

Aqualta Vale.—The Barracks for the indentured immigrants are well situated and healthy. *Quinine* is administered but not regularly. *Latrines* have been erected but are not used.

Chovey.—The barracks are situated on rising ground where the drainage is good. They have *iron roofs* but are otherwise good. *Latrines* have been erected. *Quinine* is administered but not regularly except in the fever period.

Coleraine.—The barracks for the indentured immigrants are of the prescribed form, are situated on elevated ground, well drained and should be healthy. *Latrines* have been erected. *Quinine* is administered regularly.

Orange Hill & Newry.—The barracks for these two estates are close together. The site has been well chosen and being erected on the side of a hill are well placed for drainage. Concrete gutters have been placed round the old barracks which keep dry in wet weather. Those occupied by the indentured immigrants have been built in accordance with the regulations laid down but have the objectionable zinc roof.

Quinine is administered regularly and freely during the fever period. *Latrines* have been erected.

Sheerness.—The barracks are well situated on high ground with good drainage. *Latrines* have been erected. *Quinine* is administered regularly.

Green Castle.—The barracks are of the prescribed type in a healthy situation. The surroundings are not kept as clean and free from rank grass and low growth as they should be. *Quinine* is not administered regularly and the property being in such a healthy situation it need not be administered except during the fever period, which is done.

Nuttfield.—The barracks here are some of the best in the district. The situation is very healthy, high above the malaria areas, and drainage is good. The surrounding land is kept clean. *Quinine* is administered but only regularly during the fever period.

Rose End.—These barracks are old and delapidated, the roofs are of iron and the walls of wattle and daub. Drainage is good. *Quinine* is administered regularly.

Water Valley.—The barracks are well built, the situations are good and healthy and well chosen for drainage. *Latrines* have been erected. *Quinine* is administered regularly.

H. JOSLEN, D.M.O.
5.5.14.

GLASGOW.

S. M. O.

In reply to Circular 35 No. 978 I beg to state that there are indentured Coolies only at Rose Hall estate in this district and that the sanitary conditions at and around their barracks there are satisfactory. There are no malarial mosquito breeding places in the vicinity of the barracks which are on a gravel soil near the sea.

The latrine accommodation is satisfactory, but practically unused.

(b) I understand that quinine is regularly administered to the immigrants on the estate.

H. G. JOHNSTON, D.M.O.
7.4.14.

MONTIGO BAY.

S. M. O.

In reply to Circular 35 No. 978 dated April 3rd 1914, I have to state that the sanitary condition of the estates, Mocho, Seven Rivers and Providence where indentured Coolies are employed is fairly good. The *latrines* were erected according to plan and directions given by the authorities at Headquarters and are kept clean and well disinfected. The drainage is good, and the barracks clean and dry. These latter are periodically disinfected and white-washed.

The *water supply* is good—Providence and Mocho being supplied with rain water stored in concrete and iron tanks. At Seven Rivers the water supply is obtained from a spring which is protected by the estate.

Quinine is regularly administered.

Malaria has not been more prevalent than usual and the few cases seen have been of a very mild type.

GEO. WM. THOMSON, D.M.O.
16.4.14.

Sav.-LA-MAR.

S. M. O.

In reply to Circular 35 No. 978 of April 3rd 1914, I beg to say that the following estates are in my district, viz:—

Shrewsbury, Friendship, Barham, Blue Castle and Meylersfield and the general sanitary condition of all of them so far as coolies are concerned may be taken to be fairly satisfactory.

The drains around the barracks are kept well opened as a rule though on one or two occasions I have had to draw the Overseer's attention to them on one or two of the estates.

Malaria, as would be expected, was more prevalent among the indentured immigrants on Meylersfield than on any other of the estates in my district, though I do not think that the actual percentage of infections would be much higher than that which obtains upon the other estates.

As to the latrines, each estate except Meylersfield is provided with a pit which in the case of Shrewsbury and Blue Castle is surrounded by galvanized sheeting without a roof. At Friendship and Barham the latrines are boarded and roofed with thatch, in the case of Meylersfield the latrines are most elaborate, are made of concrete and shingled, with a supply of dry earth and lime at all times in them which the Coolies are instructed how to use. In spite of all this I think the latrines must be considered a failure, and from what I can gather from the Overseers and Headmen and from observation of the latrines themselves, I have come to the conclusion that no indentured immigrant will use a latrine if he can help it. The latrines at Meylersfield seem to be more used than those on any of the other estates and I attribute this to the fact that there is a large expanse of open ground surrounding the first lot of barracks erected. The second lot of barracks have not been long completed and no latrine has yet been provided in connection with them and it will be interesting to note when the latrines are erected whether they will be as much used, as those attached to the older barracks as the land surrounding the new barracks is not nearly so open as that around the old ones.

I have no means of positively knowing whether quinine is regularly administered, that is, administered daily to the indentured immigrants, but I am inclined to think that it is not done with the regularity that it used to be.

C. E. HARVEY, D.M.O.
25.4.14.

LITTLE LONDON.

S. M. O.

In reply to your Circular 35 No. 978 I have the honour to report that the sanitary conditions on both Retrieve and New Hope in Westmoreland and Phoenix in Hanover are as good as one can reasonably expect. The buildings are all of the same type—floored—boarded and with galvanised zinc roofing, trenches are dug around the barracks where needed and these I have always found clean and in good order. I impress on the owners the necessity to destroy all small receptacles which would breed anophelines and to fill in small holes that might accumulate water and larvæ.

These precautions and the regular administration of quinine have reduced the number of cases of malaria to a very great extent.

As to latrines, the regulation "pit" was dug at Retrieve and the coolies had to be forced to use it for a time. I condemned it as the stench as one approached it was something awful, the pit got full of water from rain and soon became a concentrated solution of fæces. At present the coolies are allowed to defæcate on the ground in a certain circumscribed place.

(b) Quinine is regularly administered to the coolies on certain estates.

F. A. SINCLAIR, D. M. O.
10.4.14.

GRANGE HILL.

S. M. O.

I have the honour to reply to your Circular 35 No. 978.

Mt. Eagle.—The sanitary conditions here are good as far as the site of the immigrants' barracks is concerned, and the estate in general compares favourably with the other lands of Westmoreland. Drainage is carried out by means of a trench dug around barracks, from which trench the water is carried off by way of another trench and the water distributed in the land surface a little distant from barracks.

Malaria is less here than at other estates. There are two *latrines*, one for males and one for females, wattled, roofed constructions, with the usual trench-pit and boards.

Frome.—The sanitary conditions here are moderately good. The situation of the barracks being as good as the estate can afford. Drainage is as at Mt. Eagle except that the water is carried to the water-table and drains of the main road. There is a good deal of malaria here. The *latrines* are as at Mt. Eagle.

Fontabelle.—The sanitary conditions here are moderate, the estate having a good deal of morass land. Drainage around barracks is as at the afore mentioned estates. The *latrines* also being the same. This estate is malarial.

Belleisle.—This is the most swampy of all the estates under my charge and distinctly the most malarial. The new barracks however, are very favourably situated and their surroundings are kept free from bush and grass and seen more easily than is possible with the old barracks where the grass grows rapidly and thickly. The *drainage and latrine systems* are as mentioned.

Paul Island.—This place is more or less a part of Belleisle estate, but is less malarial as indicated by the health of the immigrants. *Drainage* and *latrine* systems are the same here as at other estates.

(b) Mt. Eagle and, I believe, Paul Island are the two estates where quinine is regularly administered to the immigrants, the remaining estates I believe run out of quinine for periods of 5 weeks or thereabout sometimes.

W. H. BEARD, D.M.O.
20.4.14.

LIONEL TOWN.

S. M. O.

I have the honour to forward the following report on the sanitary condition of the coolie barracks on the estates in this district on the general health of the coolies for the year ending March 31st, 1914.

Moreland and Hillside.—The barracks on these estates are modern in type and are well built substantial and water tight structures. The surrounding compounds are clean and are kept in a sanitary condition.

A considerable amount of bushing has been done at Moreland; many trees in the vicinity of the barracks have been cut down.

Quinine is administered regularly on this estate. There has been a considerable amount of malingering. The health of the coolies has been fairly good. Very little really serious sickness occurred. Venereal diseases were very prevalent. This in my opinion is contributed to largely by the disproportion between the sexes.

Thymol.—The immigrants have been well thymolised. Consequently the general standard of health has risen.

The *latrine* accommodation is excellent and it is a matter for regret that the coolies do not use them to any great extent.

Bog.—This estate has a small number of coolies but they are well housed on an exceedingly well drained site. *The location is probably the best in the parish.* The health of the coolies has been fairly satisfactory. Here again practically no use is made of the latrines.

Amity Hall and Chesterfield.—The coolies in these estates are a healthy and industrious lot. The barracks are well kept and their general condition is satisfactory. One case of pulmonary tuberculosis occurred at Chesterfield.

Quinine is distributed when necessary. *Thymolising* has been carried out to a large extent. One of the worst cases of Ankylostomiasis seen came from this estate and Dr. Scott discovered one of the varieties of Schistosoma in a specimen submitted for examination. *Latrines* are provided.

Carlisle.—The barracks are modern. The compound could be tidier. The location is not quite so healthy as on the other estates but the coolies enjoy fairly good health.

Money Musk.—The barracks are about the best in the parish and are well kept. The *latrine* accommodation is adequate—but here again not much use is made of them. The *latrine* question resolves itself into a constant struggle against the habits of the people. *Quinine* is distributed and the Coolies are healthy and well treated. In general the health of the immigrants has been good throughout the parish and I have been struck by the absence of complaints against book-keepers. The incidence of Ankylostomiasis has been much reduced. One death from this cause occurred. There were no fatal cases of malaria.

The extent to which venereal diseases prevail is alarming, and is really a serious matter bearing not only on the health of the immigrants themselves, but also upon the birth rate. Miscarriages occur too frequently and I am of the opinion that it is necessary to introduce a larger proportion of women in future importation of immigrants.

I regret that quinine is not distributed as regularly as it should be on some of the estates. The managers are circularised at intervals emphasizing the importance of its regular administration.

M. T. CASSIDY, D.M.O.
2.5.14.

SPANISH TOWN.

S. M. O.

In reply to your Circular 35 No. 978 of the 3rd instant, asking for the conditions of the indentured immigrants in my medical district, I have to say:

1. Only one estate has coolies—9 indentured. The sanitary condition of the barracks is good—not much malaria. The latrines are pits, dug on the place, which the coolies seldom use although they have been told to do so. The drainage around the barracks is good.

2. Quinine tablets are issued and there is some difficulty to get the coolies to take them regularly.

J. H. PECK, D.M.O.
16.4.14.

LINSTAD.

S. M. O.

In reply to Circular 35 No. 978 dated the 3rd April 1914, I have the honour to report that the sanitary condition of the various estates on which indentured immigrants are employed is, as far as the cultivation of the banana will allow, on the whole good.

The drainage around the barracks of the immigrants is in perfect order. Only on two of the seven estates are the barracks erected on a stretch of level ground. On the other five they are most healthily situated on high levels with the land sloping away immediately from the dwellings.

Latrines have been erected on all except Worthy Park and Rio Magna. On the latter estate it has been promised to see to the erection of one at once. The proprietor of Worthy Park has refused to erect any such building. It is complained that the immigrants do not make use of the latrines.

Quinine has been regularly administered. On Worthy Park it has been discontinued as it was found that the immigrants only made a pretext of taking it and spat it out as soon as they thought themselves out of sight.

L. M. CLARK, D.M.O.
28.4.14.

THYMOLISATION OF RECENTLY ARRIVED COOLIES.

Port Royal, 31st December, 1913.

Sir,

I have the honour to report as follows on the treatment of indentured labourers for ankylostomiasis at the Quarantine station.

Acting on instructions contained in your letter No. 666/13 of 29th September last, 293 indentured East Indian immigrants were landed at the Quarantine Station on the 1st instant for the treatment of Hookworm with thymol.

Of these 293; 205 were males and 88 females.

Of the 205 males, 158 or 72.19% were infected; while of the 88 females only 25.77% were found to be infected.

This small number clearly does not represent the entire number of females.

Many of the men but many more of the women objected most strongly to passing their stools into a receptacle which would have rendered the detection of the worm more certain.

In this way, therefore, must be explained the small percentage of females represented as infected.

In many instances the ova were seen under the microscope in cases where no adult worms were found in the sieve.

There were a few cases of anæmia observed—one case of very marked anæmia calls for special notice. Mahadoc No. 55 who was deferred by the medical board for three months. He was found to be heavily infected with Hookworm, which were passed in large numbers after thymol.

Tape worm (*Tania Solium*) was found associated with Hookworm in six instances.

The method of administration followed was that used at the Quarantine Station on previous occasions, with the exception that forty grain doses of thymol were given instead of thirty as previously.

Again the drug was well tolerated and in no instance that symptom of any degree of severity appear which could reasonably have been attributed to the thymol.

Minor ailments of slight gastric disturbance did appear in a few.

In general terms great improvement in physical appearance followed the treatment and a tonic, mixture as before containing quinine, iron and strychnine was readily taken and fully appreciated by them.

Thirty-one did not receive thymol for the reasons set forth in attached list.

The grounds of the Quarantine Station were cleared and freed of bush by the immigrants, who were employed in gangs and frequently changed, so that it was in reality healthful exercise as well as useful work in which they took a cheerful part.

An infant (female) a few weeks old and born on shipboard died from inanition on the 7th instant.

They left the Quarantine Station on the 19th instant. Again very marked improvement followed in the physical appearance of the immigrants as a result of the free purgation the thymol and the tonic and it is bound to prove a beneficial introduction to their powers as estate labourers as well as infectors of new coolies for Hookworm in the island.

The Protector of Immigrants has been supplied with a list of those who were not able to take the thymol at the Quarantine Station with the object that they may be traced to the various estates to which they have been allotted and as soon as able to be treated with thymol at the estate or hospital.

I have, etc.,

D. NEISH, Health Officer.

REPORT REGARDING HOOKWORM ON THE ESTATES IN THE PORT MARIA DISTRICT. GREAT IMPROVEMENT SHOWN.

Sir,

Port Maria, April 14th, 1914.

I have the honour to acknowledge receipt of your letter 564 of the 9th inst. *re* two deaths reported among coolies, in hospital from Ankylostomiasis during the month of March. In reply I beg to state:—

(1) That all coolies admitted to hospital are thymolised on admission, unless owing to their general condition, orders are given by me to the contrary.

(2) That on my visits to the estates all the coolies are examined in accordance with the terms of my letter of appointment.

(3) That I am absolutely opposed to the Overseers or estate agents administering thymol to the coolies on the estates, and I do not think such a system is practicable, nor is it necessary under present conditions.

(4) That the two coolies who died had been released owing to the pernicious and progressive anæmia, which persists in some cases after all the Ankylostomes have been removed, and which is resistant to all forms of tonic treatment. Their names and other details are as follows:—

(1) "Sakrani" a released coolie from Hopewell estate (Richmond district). She was in hospital 13 days before death. She was admitted in a very weak condition. I do not know how long she has been on the estate (apply Dr. Ritchie) but she has been thymolised several times in this hospital since I took charge.

(2) "Ramchand" ex Indus (IV) has been attached to Frontier estate for 3½ years. Has been ill off and on since I took charge of the district and has been thymolised times without number in this hospital. He was recommended for release by me some months ago and was I believe released. He was 32 days in hospital.

I may state in conclusion that the incidence of Ankylostomiasis has been reduced by over 50% within the past year; that all the coolies on the estates (including Nonsuch and Tremolesworth, which were Hookworm infested) are working 90% strong, that my death rate is about ¼ of what it used to be, and with one or two exceptions all the deaths have been among released coolies. In other words I am earning easily 8/ per head per annum.

I have, etc.,

G. I. LECESNE, D.M.O.

The Hon. S. M. O.,
Kingston.

OVERCROWDING IN HOSPITALS.

Overcrowding has, for some years been a great trouble in some of the hospitals, in which Coolies are treated.

The hospitals where this occur were, during the year under review, Port Antonio, Annotto Bay, Sav.-la-Mar and Montego Bay.

When Port Antonio is overful the immigrants for whom room cannot be found are sent to Buff Bay.

When Annotto Bay is overcrowded the superfluous patients are sent either to Buff Bay Hospital or to Spanish Town, the result being that carriage of such patients amounted during the past year to a sum of £234 9s. 6d.

The sending of immigrants by train entails a lot of extra work on the staff of the hospital concerned.

Patients able to travel have to be selected, tickets have to be filled in and this gives extra work to those concerned.

The highest number of patients in one day at—

Port Antonio was	190	Number of beds allowed	..	150
Annotto Bay was	254	"	"	134
Sav.-la-Mar was	210	"	"	190
Montego Bay was	82	"	"	55

ABSENCE OF ISOLATION WARDS.

It is pleasant to be able to record the fact that Savanna-la-Mar, Port Maria (new) and Lionel Town Hospitals have had small isolation wards built on in connection with them. Buff Bay since the erection of the two large wards now has a ward for the isolation of Phthisical patients.

UNDERSTAFFING OF THE HOSPITALS.

This is a time-worn complaint and a very real one. More medical attendance is needed at some of the large hospitals while the subordinate staff are often greatly overworked, there being room in some of the large Hospitals for a Clerk who should do some of the clerical work now done by the Dispensers and Matrons whose time is too much taken up with stores and accounts.

Every hospital also should have at least two properly trained nurses and the larger ones more in proportion.

TRINIDAD TUBERCULOSIS CONFERENCE.

During the year a Conference dealing with the subject of Tuberculosis in the West Indies was held in Trinidad.

Dr. G. H. K. Ross was sent as the Official Delegate from the Jamaica Government.

It is to be hoped that some good may result from the Conference.

GIFT TO A PUBLIC GENERAL HOSPITAL.

A wheeled invalid chair has been presented to the St. Anns Bay Hospital by a well known gentleman who, however, does not wish his name to be mentioned.

The thanks of the department are due to him and the kind gift has been gratefully accepted.

The following new cots and bedsteads have been supplied to hospitals during the financial year, 1913-1914:—

Cots.

Sav.-la-Mar	..	..	..	88
Buff Bay	..	..	..	27
Montego Bay	..	..	..	15
Hordley	..	..	..	8
Lucea	..	..	..	15

Bedsteads.

Montego Bay	..	..	..	9
Mandeville	..	..	..	3
Jubilee	..	..	..	1

Although the provision of cots has resulted in a cheap initial outlay it is very questionable whether in the long run they are anything like as cheap as the common so-called "Soldier-beds."

The following returns show the cases of so-called Vomiting Sickness, Pellagra, and Leprosy seen by the several District Medical Officers during the year.

District.	So-called Vomiting Sickness.						Pellagra.						Leprosy.						Remarks.
	Cases seen.			Deaths.			Cases seen.			Deaths.			Cases seen.			Deaths.			
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	
Kingston	1	1	..	1	1	1	1	2	Seen after death
Lower St. Andrew	..	8	5	13	2	..	2	4	10	14	3	7	10	..	..	..	..	..
Stony Hill	1	1	..	1	1	..	1	..	..	..	..	..	..	..	..	..
Gordon Town	..	3	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Morant Bay	
St. Davids	
Plantain Garden	
River	3	2	5	2	1	3	..	1	1	..	..	..
Manchioneal	
Port Antonio	1	2	3	..	1	1	..	..	..	..	..	..
Buff Bay	..	2	6	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Annotto Bay	1	1	..	1	1	..	..	..	..	..	..	..	..	..	..	..
Richmond	..	1	..	1	1	..	1	..	..	..	..	..	..	1	1	..	..	..
Port Maria	..	7	5	12	7	5	12	..	..	..	..	..	..	..	..	..	..	..
Gayle	1	..	1	..	..	..	..	..	1	..	1	..	..	..
St. Ann's Bay	1	1	..	1	1	..	..	..	..	..	..
Claremont	..	1	..	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..
Cave Valley	1	..	1	1	..	1	
Ulster Spring	..	1	3	4	1	..	1	..	1	1	..	..	..	1	1	1	..	..
Duncans	..	2	6	8	2	3	5	..	..	..	..	..	2	..	2	..	..	..
Falmouth	..	7	10	17	4	3	7	..	..	..	..	..	1	..	1	..	..	..
Montego Bay	1	..	1	..	..	..	1	1	2	..	1	1	
Adelphi	1	1	2	..	..	..	..	..	..	..	..	..	..	..
Lucea	1	1	..	1	1	
Little London	
Sav.-la-Mar	3	5	8	..	2	2	..	..	..	..	..	..
Grange Hill	1	1	..	..	..	..	..	..	..	..	..	..	..	..
Lamb's River	2	2	..	..	..
Black River	
Santa Cruz	2	..	2	..	..	..	..	..	..	..	..	..
Balaclava	..	2	3	5	2	3	5	..	..	..	..	..	..	..	..	..	..	..
Mandeville	1	1	..	1	1	
Newport	1	2	3	..	..	..	..	..	2	..	2	..	..	..
Christiana	2	2	..	..	..
Chapelton	3	..	3	..	..	..
May Pen	1	1	3	2	..	1	2	..	2	..	..	..
Vere	..	1	..	1	1	..	1	2	1	3	2	..	2	..	2	..	..	..
Crofts Hill	..	3	..	3	3	..	3	..	..	..	..	..	..	3	3	..	..	..
Spanish Town	..	3	..	3	1	..	1	..	..	..	..	..	..	..	..	..	..	..
Linstead	1	..	1	..	..	..	..	..	..	..	..	..
Old Harbour	..	*	
Port Royal	1	1	2	..	..	..	..	..	..	..	..	..
Temporary Out-Stations	
Browns Town	
Hope Bay	
Southfield	2	3	5	..	..	..	1	..	1	..	..	..
	41	40	81	28	20	48	21	28	49	7	14	21	15	14	29	1	3	4	

* These cases when they occur are now diagnosed by Dr. Simpson as Cerebro-spinal Meningitis and not reported as so-called Vomiting sickness cases at all

In addition to the above, thirteen cases of Pellagra were seen by the Pellagra Commission at the Mannings Home in St Elizabeth, but the Medical Officer in charge does not appear to have kept a record as to how many were males and how many were females.

NON-MEDICALLY REGISTERED DEATHS.

Once more this has to be called attention to as a matter of serious importance. As previously stated this is doubtless due in some respect to the insufficient facilities for procuring cheap and easily obtainable medical advice, especially in the case of persons who live a long way from the District Medical Officer, although the Bush Doctor and the negligence of the people also have something to do with it.

Some two-thirds of those who are buried have been buried without any medical evidence as to the cause of their death and consequently the cause of death must be a mere conjecture in many cases and the deaths may have been due to any cause at all, fair or foul.

Many of these deaths classed as being due to undefined Fevers would seem in past years to have been looked upon as "Malarial Fever" but it would appear that since the Is and has obtained an expert Bacteriologist this, may it be called "Fetish or Cloak for ignorance" is being found out and we are beginning, it would appear, to find that, in all probability, many an ailment that might and would have been called "Malaria" in olden times is now in all probability called by its proper name "Typhoid Fever."

The Registrar General has kindly supplied me with the following particulars with regard to the number of non-medically certified deaths.

The number of deaths from so-called Vomiting Sickness and Enteric Fever, 1913-14.

Parish.	Total Deaths.	No. of Non-medically certified deaths.	No. of Deaths registered from	
			Vomiting Sickness.	Enteric Fever.
Kingston	1,734	275	..	73
St. Andrew	1,394	742	10	7
St. Thomas	906	611	..	20
Portland	1,024	677	6	16
St. Mary	1,355	897	23	39
St. Ann	1,303	1,076	5	6
Trelawny	831	652	26	6
St. James	1,051	801	12	21
Hanover	1,082	868	..	19
Westmoreland	1,740	1,319	1	30
St. Elizabeth	1,507	1,324	17	11
Manchester	1,217	1,034	4	15
Clarendon	1,528	1,314	27	13
St. Catherine	2,069	1,534	2	19
Island	18,741	13,124	133	295

CONVEYANCE OF PATIENTS TO HOSPITALS.

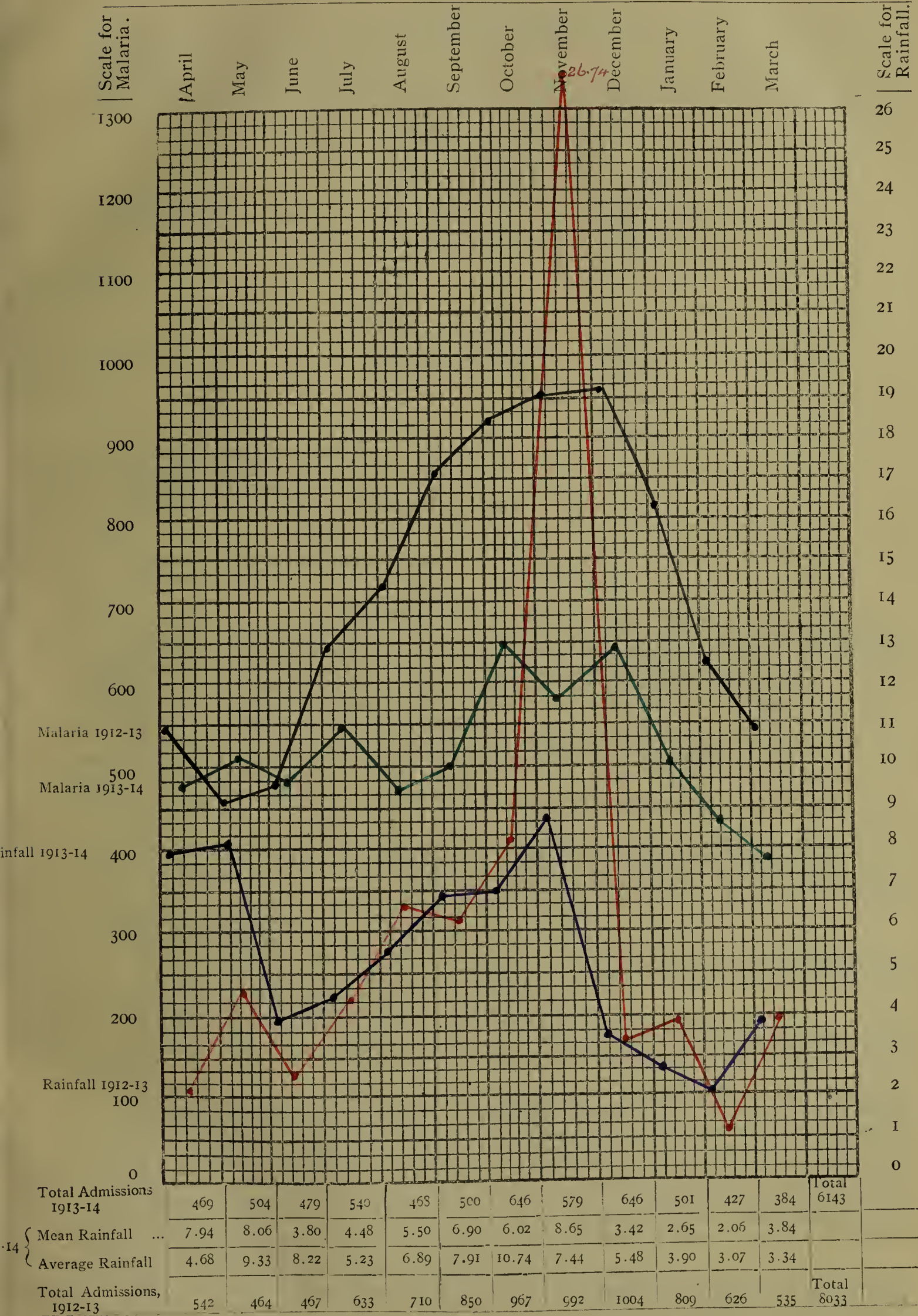
Owing to the distances that people live from the hospitals it would indeed be a boon were the Parochial Authorities each to provide an Ambulance in which suffering humanity could be conveyed comfortably to the nearest hospital.

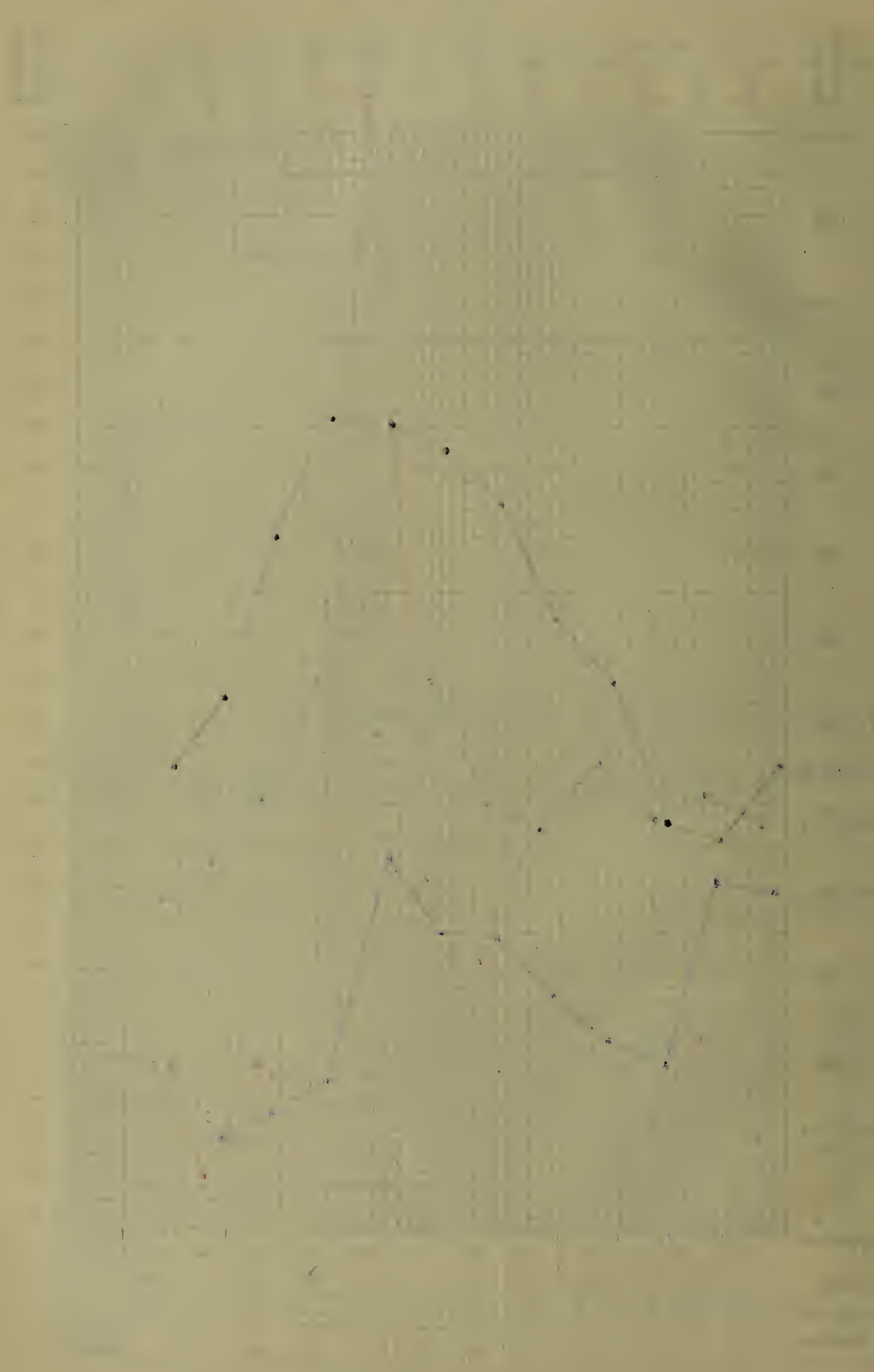
This matter was suggested by the Central Board of Health as regards Kingston by letter No. 231/144 dated 29th November, 1909 and answered by your letter No. 12089/15371 of 9.12.1909.

Admissions to the various Hospitals month by month for Malaria.

Hospitals.	April	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	Total.
Morant Bay	17	11	8	22	19	19	33	28	29	11	7	15	219
Hordley	32	72	67	74	46	71	81	83	47	35	47	32	687
Port Antonio	81	85	50	94	64	91	99	88	99	66	36	39	892
Buff Bay	37	25	40	41	35	41	53	46	55	41	40	30	484
Annotto Bay	79	78	68	89	105	95	108	112	119	113	100	83	1,149
Port Maria	44	27	22	28	19	35	50	56	49	25	25	27	407
St. Ann's Bay	5	5	4	10	11	6	20	10	9	14	7	8	109
Cave Valley	1	1	..	..	..	..	..	..	..	..	..	..	2
Falmouth	..	3	1	1	1	1	..	2	4	3	6	4	26
Montego Bay	20	12	8	5	5	9	5	8	20	21	7	10	130
Lucea	12	13	8	9	3	3	4	4	10	8	16	10	100
Sav.-la-Mar	81	97	98	92	84	77	124	79	79	77	71	66	1,025
Black River	..	5	3	3	6	7	4	9	8	5	2	2	54
Mandeville	1	..	5	..	..	..	2	..	1	..	..	..	9
Chapelton	5	4	1	..	2	..	1	1	3	1	1	1	20
Lionel Town	32	32	41	41	41	23	31	30	76	55	32	32	466
Spanish Town	15	20	40	20	23	14	23	20	26	18	21	12	252
Linstead	2	..	4	1	1	3	4	..	8	1	1	4	29
Kingston	5	14	11	10	3	5	4	3	4	7	8	9	83
	469	504	479	540	468	500	646	579	646	501	427	384	6,143

Chart showing the monthly number of admissions to the Public Hospitals in Jamaica for Malaria as well as the monthly Rainfall during the Financial year, 1913-1914. and 1912-1913.





QUININE TO SCHOOLS.

By permission of His Excellency the distribution of quinine by Mrs. Bourne to some of the Schools in the island took place.

About one quarter of the schools are said to have received this quinine in tablets which is sent to the School Teachers. It would appear that there has been no regular detailed report kept of the quinine said to have been distributed by these teachers.

Return shewing the amount of quinine supplied from the 1st April, 1913, to the 31st March, 1914.

		TABLETS.			
<i>Police for own use</i>	48,825	No. of 5 gr. doses		34 lbs.—14 ozs.	
<i>Police for sale</i>	..	..	..	7,000	"
<i>For distribution to Schools</i>		No. of 5 gr.	"	24	"
		" " 3	"	24	"
		" " 2	"	19	"
		" " 1	"	4	"
				71 lbs.	

<i>Post Offices for sale</i>	Packets of 5 Grains	256,900
	" " 3 "	4,000
	" " 2 "	3,000
	" " 1 "	1,000
		264,900

Estates doses of 5 grs. 246,705— 176 lbs., 3½ ozs.
Parochial Boards 16 " 5 "
Hospitals and Asylums 14 "
Total Receipts minus Police and Departments £402 15s. 8d.

POWDER.

Hospitals and Asylums Quinine Sulph. 187 lbs 7 ozs.
Parochial Boards .. 13 lbs. 12 ozs.

REPORTS ON WATER SUPPLIES BY MEDICAL OFFICERS.

Stony Hill—The Water Supply generally is from surface springs. That of Stony Hill is from a spring drawing its supply from an area covered with latrines, shop and house waste, and road washings. This spring has been condemned and yearly reported on as dangerous for at least 15 years. When the earth filter breaks down the conditions for an outbreak of water borne diseases are all present.

The water supply of the Industrial School is from surface wells, reinforced by tanks. One of these wells has been reported as potentially dangerous.

During the late drought it became necessary to carry water from the Wag Water River, 1½ miles away, the wells being nearly dry. The water supply had to be carried in buckets.

The Stony Hill spring is constantly polluted. The other springs if polluted, do not remain so for long—at least there is no evidence that they do.

Gordon Town—The Water Supply to Gordon Town, the Hope River, is protected by Law from pollution.

The Water supply of Mavis Bank and Mount Charles is derived from springs and the Fall River which are not protected by Law. I should again strongly advise them to be protected by Law.

Hagley Gap—Rivers and springs are the chief sources of water supply. Their purity may not be above suspicion but there has been no outbreak of sickness of a serious nature. It would be a very difficult matter to protect these rivers and springs.

No means adopted to prevent the pollution of water supplies.

Morant Bay—Morant Bay, the chief town is fairly well supplied with water of good quality.

Manchioneal.—The villages and town derive their water supply from mountain streams and rivers, of which there are several, these are protected by Law.

The pollution of the water supplies may be questionable.

Buff Bay.—Buff Bay depends almost entirely on wells for its water supply.

The wells are naturally polluted and in nine out of ten cases there is a pit closet and a horse stable within a chain of the well. Before one begins to talk of sanitation in Buff Bay we must talk of water supply.

Richmond.—Highgate and Richmond depend for their water supplies on tanks, wells and springs running through or near the villages—all these supplies can be easily polluted. The need for a wholesome water supply by pipes is most keenly felt and I understand that the Parochial Board has under consideration a scheme for providing such a supply—I feel convinced, if this water service is provided, that it will prove a source of considerable revenue to the Board and satisfy a long felt want in these towns.

Port Maria.—Port Maria is supplied by pipes from two sources near Crescent. There is no chance of pollution and the purity of the water is unquestioned—a fact confirmed by a recent bacteriological examination of a sample from the pipes in the town. The supply is constant and abundant except in times of severe drought and it has been decided to extend it towards Galina. Oracabessa and some of the smaller settlements are supplied by protected springs.

No instance of pollution of water supplies has come under notice.

Gayle.—In the last Annual Report it was pointed that the villages and districts were served by rivers and springs which abounded plentifully and that the Parochial Board had taken measures to protect from pollution certain springs then named, and had under construction the protection of the Carron Hall and White Springs. Work on the first named was duly completed, but the White Spring still remains unprotected. This spring being the chief drinking water supply of the Windsor Castle District

it cannot be too strongly urged how important and desirable it is that the work of the protection should proceed without further delay. There are many other streams supplying drinking water at many other points which are exposed to pollution still left unprotected and it is hoped Parochial Funds will permit early attention to these during the current year.

A sample taken from a well on Burnett Land was forwarded to the Island Chemist who reported that it was unfit for drinking purposes. Instructions were immediately issued to warn the people and stop them from using the water.

Claremont.—Water supplies are by private and public tanks catching rain water. Pond water also used in districts away from villages badly contaminated by live stock.

All ponds are polluted and most tanks that are not walled up above ground level.

St. Ann's Bay.—St. Ann's Bay receives a good water supply by pipes from the Roaring Water. All the principal villages also have a river supply.

In so far as is known the water supply is not more than usually exposed to pollution.

Cave Valley.—The water supply is by tanks. Good enough in quality, but up to the present time the supply has been insufficient. The dry districts will soon be better served, public tanks are in the course of construction.

Brown's Town.—The water supply during the year was good and plentiful, there was no drought. The source in most places is by tanks and butts storing rain water, in others by rivers and springs. The purity was up to the average as no disease could be traced to impure water.

The water supply during the past year has been practically free from pollution. When the Public Tanks now in course of construction are completed the water supply of this district will have been greatly increased.

Falmouth.—The water supply from the Martha Brae River is abundant and good.

No pollution of water supplies has been brought to notice.

Clarks Town.—The water supply of Stewart Town is by rivers and ponds; of Rio Bueno by river; and Duncans by ponds and spring and Clarks Town by ponds. There is no means of preventing pollution. It is general.

Ulster Spring.—The water supply in the chief village, Ulster Spring, is good, the main sources, the Dam and Big Spring being protected by Law. In outlying districts it is difficult to make arrangements as people take water at any of the numerous spring by which the country is intersected. An attempt is being made to protect one spring at least in each district.

Montego Bay.—The water supply is still in need of improvement in Montego Bay, both as regards service and purity of the water.

Examinations of several sources of drinking water in the country districts have revealed the fact that they are all polluted and unfit for use unless boiled.

Adelphi.—At Somerton village the Parochial Board protected a spring with masonry some years ago and on some of the larger properties there are wells and tanks for storage of water; otherwise the water supply of the district is from unprotected springs and streams and from cattle-ponds.

Lucea.—Lucea is supplied by pipes but the supply is spasmodic during the dry months. A new reservoir has been made but owing to the dry weather its usefulness has not been tested.

Pollution of water supplies protected only in and around the town of Lucea.

Little London.—The water supply is from wells, streams, ponds and tanks. The water is pure except that from ponds.

Sav.-la-Mar.—The water supply of Sav.-la-Mar is good and free from suspicion but is very inadequate during the dry season of the year.

Bethel Town.—The better classes have tanks while the poorer classes depend on their drinking water from the numerous ponds which are to be found on the pens. The water from the ponds is unfit for drinking purposes and many of them are liable to contamination. The York Spring which is a public and free source of drinking water has been repeatedly condemned.

Santa Cruz.—The water supply of the village is by wells and tanks; as to the quality of these waters it is very doubtful if they are of reasonably good quality, but whilst much assiduity has been displayed by the Health Department in prosecuting investigations into the water supply of the local Public Schools which is used for a handful of the better class children, the condition of the water supply for large numbers of the lower orders has not so far been deemed of any consequence.

Mandeville.—Mandeville is supplied from the Battersea Reservoir with water of excellent quality. It is laid on to the town but it is not compulsory for anyone to take it. The two hotels in the town are supplied. Otherwise the Water Supply is contained in tanks and is of doubtful purity.

The village of Porus has a reservoir now, which was badly needed.

No pollution of water supplies known of.

Newport.—The completion of public tanks by the Parochial Board will give a good water supply in many districts during periods of drought and thus save the people from drinking polluted pond water. The ordinary ponds around the houses with ground catchments must be contaminated with animal and human excrement as waste matter is scattered broadcast over the fields adjoining the houses.

Christiana.—The water supply is by tanks, ponds and springs. There is no pollution of water supplies.

Lionel Town.—The water supplies in the different towns and villages are fairly satisfactory of this kind. Wells are in universal use except in those districts adjoining the Rio Minho. No outbreaks of water borne diseases occurred so it may be inferred that the water is of fair quality.

It is regretted that the water from the pools in the Minho River is used for human consumption.

Crofts Hill.—The water supply of this district is derived from springs and rivers. In some cases the water is obtained right from the head of the spring and so there is little chance of pollution. In other cases however the supply is derived from springs along their courses and also from rivers, and here the purity of the supply is very questionable. Where the water supply is derived from springs along their courses and also rivers pollution is bound to occur. The amount of sickness which is traceable to such pollution is practicable nil.

Spanish Town—The water supply for the chief town is from the Rio Cobre. The villages have ponds and tanks. The water supply is of fairly good quality.

Water supplies are protected under the Law; District Constables have been instructed to make frequent patrols and prosecute any parties offending.

Old Harbour.—During the early months of 1913, the Hon. Commissioner laid 4 inch iron pipes in the aqueduct leading from the dam at Bartons to the reservoir at Colbeck, in order to prevent contamination and avoid the leakage due to the ruinous state of the old masonry.

From considerations of economy it was necessary to obtain these pipes by taking up one of the 4 inch mains connecting the reservoir with Old Harbour Market, so that only one of the original pipe lines now remains, and it is hardly necessary to state that this is quite inadequate to meet the needs of the ever increasing population of the town of Old Harbour and the adjacent villages of Church Pen and Old Harbour Bay.

A new scheme of water supply is now mooted, by which the Jamaica Tobacco Co. are to have their own independent source from a place called Fall Hole, some miles higher up the river than the present dam.

The water supply is now free from any chance of pollution after leaving the dam.

Linstead—The water supply of Linstead is by pipe and is abundant in quantity but is of doubtful quality. A storage reservoir and filtering beds are very much needed.

The supply of the other villages is from the nearest river or spring. All of these rivers have been placed on the protected list and while some amount of pollution still goes on, more vigilance is being observed in bringing the perpetrators to justice.

Port Royal—The water supply of Port Royal continues good. During the year it became necessary on account of encroachments of the sea to deviate the main pipes from Rock Fort Spring to Port Royal. The work of deviation was undertaken by the military and their arrangements for supplying water were excellent. Every means is taken to prevent pollution.

GENERAL SANITATION.

Stony Hill—The latrine system is still generally the "surface closet," when any latrine arrangements exist at all.

An attempt is being made to abolish this class of closet in conformity with the regulations recently issued on the subject.

Overcrowding—Nearly all the houses are overcrowded mostly at nights.

Compounds—Generally speaking the conditions of Compounds need improvement, there usually being rubbish, cocoanut shells, etc., lying about.

Mosquito breeding—*Stegomyia* and *culex* are common. *Anopheles* occur in the low lying land near Temple Hall.

Gordon Town. Waste matter—There is no special means provided for the disposal of waste matter at Gordon Town. Most of it is put up in heaps and sometimes burnt but chiefly allowed to rot.

The latrine system consists of buckets and pits.

Overcrowding—Overcrowding is very common amongst the peasants. The chief cause of pulmonary tuberculosis.

Compounds.—Fairly satisfactory.

Mosquito breeding—Drainage being excellent there are few breeding places.

Sanitary improvements.—There have been none.

Hagley Gap. Waste matter—There is no special method adopted for its disposal but sanitary conditions are fairly good.

The latrine system is the earth system as a rule but in most cases the bush is resorted to.

Overcrowding—Is general.

Compounds—Fairly well kept usually.

Mosquito breeding—There are no measures taken to remove the breeding places of mosquitoes where they do exist.

Sanitary improvements—No new ones as far as is known of.

Lower St. Andrew—The sanitary conditions of drains, streets, lanes and small premises is still very bad. Little or no improvement having taken place in this respect.

Morant Bay—Removal of refuse by town cart system.

Mosquito breeding—As far as is known no new measures have been adopted for the prevention of the breeding of mosquitoes.

Sanitary improvements—The system of cement street drains has been added to.

Hordley. Latrines—Absent as a rule.

Overcrowding—General.

Mosquito breeding—Dr. Evans knows of no steps taken to prevent mosquito breeding in the district except that the rank vegetation that one was accustomed to see around houses has to a certain extent disappeared.

Buff Bay. Removal of Refuse—Carts remove waste matter and take it to a dumping ground.

Latrines—Chiefly pit closets.

Drainage—Open concrete gutters through the village.

Overcrowding—Very little.

Compounds—The sanitary inspectors make regular visits and see that yards and compounds are kept clean and sanitary.

Mosquito breeding—There are few breeding places in or around Buff Bay.

Richmond. Waste matter—Is disposed of in the banana fields and the deposit grounds provided for the towns.

There is no regular latrine system. In the houses of the better classes the bucket system principally is adopted. In others open privies exist but generally there is no adequate provision.

Drainage—Free on account of the hilly nature of the country.

Overcrowding—Exists, not to such an extent in the towns as in the small huts scattered throughout the district. The dangers of overcrowding, however, are considerably minimized on account of the people living principally out of doors during the days and only occupying their small rooms at night.

Sanitary improvements—Fairly satisfactory. There have been prosecutions under the Law and in consequence more attention is paid to keeping the yards and compounds clean.

Port Maria. Waste matter—A daily collection of house refuse and street sweepings are dumped in Warner's pond. The scavenging department has been re-organised to meet the requirements of the Health Law and the work is being efficiently performed. At Oracabessa and Hampstead scavenging arrangements are also good.

Latrine system in Port Maria remains the same: Open closets.

The Local Board of Health has acquired a deposit ground and has added a special sanitary rate for the town—the intention being to have the bucket system made general and to have it under the direct control of the Sanitary department.

Drainage—Surface drainage is bad in Port Maria owing to adverse natural conditions, but great improvement has been effected in this respect by the continual filling in and draining of swamp lands.

Overcrowding—Still exists in tenement houses in the town and in two roomed huts and creole barracks on the estates.

Sanitary conditions of houses and compounds—The yards and compounds in Port Maria are kept well bushed and clean, but owing to the low level of the town and the bad surface drainage they become sloppy and swampy after rains.

Mosquito breeding—Exists in Port Maria for reasons already given but the continued filling in of swamp lands and energetic inspection of yard premises are reducing these, as the decreased incidence of malarial fever amply proves.

Sanitary improvements—Much has been done, laying down of concrete drains; protecting water supplies, etc., The Local Board is still carrying on the filling and draining of Warner's Pond. Over £300 has been expended for the past financial year—nearly £100 of which has been contributed by private owners adjoining for the filling of their lands.

Gayle. Waste matter.—There are no special dumping grounds, hence the use of Banana fields and bush spots.

Latrine system—The pit and dry earth systems are chiefly in use in the better class houses, but where these are not available the use of banana fields and bush spots is prevalent.

Drainage—Only such as are provided by nature. The district is hilly and consequently results are fairly satisfactory.

Overcrowding—Continues to a great extent amongst the poorer classes who are not in a position to pay higher rentals.

Mosquito breeding—Owing to good and efficient drainage the breeding places of mosquitoes are confined chiefly to banana trenches and vessels carelessly disposed of.

The conditions under this head are not satisfactory.

Sanitary improvements—There have been no works on sanitary improvements carried out during this year.

Claremont. Sanitary conditions—Fair in the villages.

Waste matter—Collected from village streets by parochial employees and dumped at safe distances. In private premises the waste, etc., is usually dumped and buried.

Latrines—The houses of penkeepers and better class villagers are supplied with pit closets. Among the other the bucket system and level earth closets prevail.

Overcrowding—Slight.

Compounds—This has improved.

Mosquito breeding.—Comparatively scarce. Small tanks and butts have been covered with wire gauze. Minnows have been and are being placed in the larger tanks. Moneague Hotel, otherwise in excellent sanitary condition, needs new covering and wiring over its tanks.

Sanitary improvements—More pit closets have been built and are in process of building. They seem to be the best system for country districts and primitive and uneducated people. The pit used at Claremont Government School is about ten feet deep, with walled sides, and has been in use for over twelve years without needing cleaning. The bottom is bare earth.

St. Ann's Bay. Waste matter—Is disposed of in the sea. There is a dumping ground for vegetable matter.

Latrines—The latrine system in St. Ann's Bay is the pit system—a few pails are used in better class houses—the means of disposal of night soil being the sea.

Drainage—Is good; by concrete gutters.

Overcrowding—Exists.

Compounds and yards—In fairly good sanitary condition. There appears to be some improvements in this direction.

Mosquito breeding—There are no evident breeding places.

Sanitary improvements—None known of except those at Draxhall estate where the barracks for labourers have been made more sanitary after the enteric outbreak.

Cave Valley. Waste matter—Regularly carted away from the town, while in other parts of the district the usual method is adopted first thrown on heaps in the yard and later scattered over the fields for manure.

Latrines—The bucket and dry earth system in a few places but a small shelter with a shallow hole an apology for the so-called pit closet, is more common.

Drainage—Surface drainage assisted by the natural formation, most of the villages are built on hillsides.

Overcrowding—In many of the peasants houses in the country, but this does not exist to any great extent in the larger villages.

Compounds—Conditions have improved.

Mosquitoes—Breeding places still exist about Cave Valley and Barracks, some of these have been stocked with small fish supplied two years ago by the Department. No other steps have been taken to destroy them.

Brown's Town. Waste matter—Is disposed of by carts. The refuse is either used as manure or burned.

Latrines—By pits, some buckets and dry earth and others simply surface closets. The surface closets are gradually being replaced by pit closets or dry earth closets. As regards the Schools receiving Government grants, representation has been made to the Local Board of Health to approach the Government with a view to erecting suitable sanitary closets in all school premises for the education of pupils on proper sanitary lines.

Drainage—Surface.

Overcrowding—Practically none.

Compounds—This has improved as a result of constant vigilance of the sanitary officers.

Mosquito breeding—There are few such places except on the swamp lands near the sea coast in the vicinity of Salem and Dry Harbour.

Sanitary improvements—In the direction of the latrine system.

Falmouth. Waste matter—Is used to fill up a pond to the North-west of the town.

Latrines—Chiefly pit closets which are mostly all in bad condition. A number of people with residences adjoining the mangroves use the open mangroves. About 12 places, including the Government buildings, have a bucket system.

Drainage—Runs off to the sea by means of water tables dug at the side of the streets. One or two streets have concrete water tables but they are a failure, being deeper and lower along their course than at the outlet. Properly graded water tables are urgently needed in this town to take off surface water, which at present after a rain chiefly finds itself from the present gutter into people's premises.

Overcrowding—None.

Compounds are bushed and cleaned and watched that they are kept so, by the sanitary department.

Mosquito breeding—Chiefly in crab holes that abound in and around the town and in a large swamp outside the town.

Sanitary improvements—Removal of penguin fences, filling or removal of broken glass bottles from the walls in the town. Filling one of the swamps in the town, cutting down Mangrove bushes.

Clarks Town. Waste matter—No regular method of disposal.

Latrines—A few houses have latrines—others use the cane pieces and bush places.

Drainage—Trenches cut in the soil.

Overcrowding—Exists generally especially at nights.

Compounds and Yards—Much improved.

Mosquito breeding—These are being destroyed. Water holes, filled up. Penguins are being removed.

Ulster Spring. Latrines—The energies of the sanitary department have been principally directed towards the latrine system which is much improved since this year. Latrines have been built in compound where there were none. Bad ones have been repaired.

Compounds—Are in fair condition.

Montego Bay. Waste matter—Is utilized to fill up rocky land and some good work has been done in this respect during the year.

Latrine system—Remains unchanged and is still the chief source of danger to the community.

Drainage—Good.

Overcrowding—There is still a good deal but measures are taken to remedy this wherever found out.

Compounds—Kept fairly clean, but there is still some room for improvement.

Mosquito breeding—The breeding places near the town are gradually being filled up and destroyed.

Sanitary improvements—The beef stalls in the market have been wired in with mesh wire. Wiring is also used in the country districts where beef is sold and articles of food exposed for sale, such as beef, bread, sweets and sugar, are now protected from pollution of flies.

Adelphi. Sanitary improvements—Except on the premises of most white people and a few of the better class coloured people they are of the most primitive character.

Lucea. Waste matter—Is disposed of by filling up swampy lands around the town.

Latrine system—Principally buckets, the contents of which are emptied into the sea.

Drainage—Surface.

Overcrowding—Now and again in one or two tenement houses.

Compounds—Are kept in a clean and satisfactory condition.

Mosquito breeding—This goes on during the wet season, and any accumulation of surface water is removed as the necessity arises.

Sanitary improvements—A few surface drains have been laid in the town.

Sav.-la-Mar. Sanitary improvements—The streets of Sav.-la-Mar are certainly being better kept than they used to be, and some new concrete drains have been laid down in the western part of the town. There are, however, many streets where concrete drains are needed.

Latrine system—Now receives more attention than it used to get but the present surface system is an absolutely bad one and as far as is known the one adopted by the residents of the town.

Overcrowding—Is perhaps better than it used to be. Change may be due to the erection of houses carried out by the Hurricane Relief Commissioners.

Compounds—The town of Sav.-la-Mar in the majority of cases in a fairly satisfactory condition.

Sanitary improvements—As far as is known there have been none.

Grange Hill. Waste matter—Is collected into heaps, which are either burnt or used as manure.

Overcrowding—Not marked.

Compounds—Satisfactory.

Mosquito breeding—The penguin plant is used to a large extent to make fences efficient and this accounts for a considerable amount of malaria as not only the rain water but the heavy dew settles in the eaves and makes inviting shaded breeding places for mosquitoes.

Little London. Waste Matter.—The food usually given to dogs, pigs, etc., other things thrown into rubbish heaps and sometimes burnt.

Latrine system.—The better classes have latrines on the dry earth system but the lower classes defæcate anywhere.

Drainage.—Natural surface drainage.

Overcrowding.—This is worse since the hurricane of 1912 than before on account of there being fewer and smaller houses than before.

Compounds.—Usually untidily kept and bush allowed to grow too near the houses.

Mosquito breeding.—Very little is done by the people generally to prevent them from breeding.

Sanitary Improvements.—None visible.

Lamb's River. Waste Matter.—Either burnt or deposited in some suitable spot.

Latrine System.—Earth closets or bucket system. In some places there are no latrines.

Drainage.—Good.

Overcrowding.—All negro houses of the poorer classes are badly ventilated.

Compounds.—Of the poorer classes are very dirty.

Mosquito breeding.—Malaria Fever cases are very few.

Santa Cruz. Sanitary Improvements.—The D.M.O. says the sanitary conditions of the villages of the district remain in the same condition as in his last report. He observes no difference now from the conditions of his childhood which were spent in the same locality, the conditions were of the same primitive type as now, despite the existence of a superior sanitary department.

Balaclava. Sanitary Improvements.—The sanitary conditions are the same as last year.

Mandeville. Waste Matter.—Is carried to the Race Course and burnt.

Latrine Systems.—Are various and very primitive and in many places, especially Porus there are practically none.

Drainage.—There is no drainage to speak of except from the market.

Overcrowding.—There is considerable overcrowding in the houses of the poorer class of peasants.

Compounds.—A great deal of carelessness shown.

Mosquito breeding.—The usual advice is given but rarely carried out especially in Porus and the outlying hamlets—no doubt now that a Health Officer has been appointed for the whole parish things will improve.

Sanitary Improvements.—None made but some designed.

Newport. Sanitary Improvements.—Beyond a house to house inspection in the village of Newport there have been no sanitary improvements. The villages in the district are clean considering there is no Sanitary Officer for this division.

Mosquito breeding.—There have been a few cases of Malarial fever treated.

Christiana. Overcrowding.—In the country parts.

Compounds.—Fairly clean.

Sanitary Improvements.—None.

Chapelton. Sanitary Improvements.—Nothing has been done to improve the sanitary condition of the district, as regards the provision of water supplies or their protection, any approved latrine system of the removal of the breeding places of mosquitoes. With reference to the last named the expense would seem to be prohibitive.

Compounds.—The condition shows improvement.

Lionel Town. Waste Matter.—Is generally disposed of by burning or is utilised for agricultural purposes, none of the towns are of sufficient size to require a cart.

Latrine system.—It is only in the houses of the better class that satisfactory latrines are provided, many houses have none at all.

Drainage.—Is very defective throughout the district in many places it is exceedingly difficult to obtain any fall at all. The water tables in the main and parochial roads are kept in good order.

Compounds.—Fairly satisfactory. In some districts there is too much bush. A considerable amount of cleaning up was done on the estates particularly at Morelands in the vicinity of coolie barracks and other dwellings. Drainage was improved and many trees were cut down. The result has been a considerable reduction in the amount of malaria seen from the estate.

Mosquito breeding.—In the vicinity of Alley the Rio Minho forms stagnant pools and Anopheles have been found there.

Crofts Hill. Waste Matter.—Is disposed of on lands surrounding the yards of the houses.

Latrine System.—Earth closets are to be found in the villages and the bucket system is used by a few residents.

Drainage.—Entirely surface, owing to the hilly nature of the district

Overcrowding.—Exists to a great extent among the peasantry.

Compounds.—Generally kept clean.

Mosquito breeding.—This does not call for any special attention.

Sanitary Improvements.—Some have been effected in connection with keeping bakehouses and latrines (where these exist) in a sanitary condition.

Spanish Town. Waste Matter.—Is regularly collected from boxes and barrels along with the sweepings of streets and carted away to the dumping ground.

Latrine system.—Is principally pit closets. Public Institutions have sanitary water closets and buckets with dry earth.

Drainage.—Is surface concrete gutters.

Overcrowding.—Kept in check by sanitary inspection.

Mosquito breeding.—Receives attention from Medical Officer of Health.

Old Harbour. Sanitary conditions of Old Harbour satisfactory.

Refuse in town of Old Harbour collected in carts and used for filling up insanitary depressions.

Latrine system.—Is a mixed one, it is regularly inspected and closets cleaned. Their contents being buried outside the village boundaries.

Drainage—In the town by concrete gutters.

Overcrowding—This exists. As the houses are only used for sleeping purposes the amount of harm done is greatly minimised.

Sanitary inspections made regularly of the condition of yards around houses.

Mosquito breeding—There are no regular mosquito breeding areas within the town boundaries—crude petroleum is stocked and used when required.

Linstead. Waste Matter—Is disposed of by merely dumping on the land.

Latrine system—Is by cesspits and also on the surface of the ground. Few latrines exist in some of the other villages: merely a building with a seat over the bare ground, but the chief sort is the bush.

Drainage—The principal streets of Linstead have concrete drains, but some of these lead into ponds which are undrained. No drainage is attempted beyond the ordinary water tables of the Public Works in the other villages.

Overcrowding—Many of the houses are mere hovels and much overcrowding exists.

Compounds—Too much rank vegetation is allowed to exist in the compounds and yards around houses.

Mosquito breeding—No active measures have been taken in this direction.

Sanitary improvements—None this year.

Port Royal. Waste Matter—Is collected daily in carts and dumped by boats beyond the harbour limits.

Latrine system—Has continued throughout the year a serious menace to public health but it is satisfactory to record that the Parochial Board have entered into a contract for the emptying of the latrine buckets daily except on Sundays, which will come into force with the new financial year.

Drainage—Surface. The town is intersected by concrete surface drains which readily carry off any water. The drains are efficient and maintained in good repair.

Overcrowding—Exists in many houses but is invariably due to poverty.

Compounds—Have been kept fairly clean.

Mosquito breeding—It is efficiently kept under control by frequent inspection of premises and the removal of all receptacles in which mosquitoes would likely breed.

FURTHER TREATMENT BY SALVARSAN.

Attached is a report from Dr. C. R. Edwards, D.M.O., Halfway Tree, on results obtained from the use of Salvarsan in the Kingston and St. Andrew Union Poorhouse, and a return from Dr. Myers, D.M.O., St. Ann's Bay regarding the use on cases in the Poorhouse.

Halfway Tree, 13.4.14.

Sir,

I have the honour to forward a Special Report on the use of Salvarsan in the Union Poorhouse, with some remarks on Chronic Neuritis for the information of His Excellency the Governor. I shall be glad if you will forward this report at your earliest convenience.

I have, etc.,

C. R. EDWARDS, D.M.O.

Suptg. Medical Officer,
Kingston.

Report of cases treated by Salvarsan in the Union Poorhouse.

The conclusion which may reasonably be drawn from a study of these 40 cases appear to me to be these:

1. That there is considerable risk in the Intra-venous method of injection.
2. That the results obtained by the Intra-Muscular method are perfectly satisfactory and free from risk if not repeated.
3. That there is risk from second and subsequent injections if sufficient time is not allowed to intervene.
4. That the time cannot be definitely stated in any given case at present, but judging from the limited number of cases treated by me I should say that three months ought to elapse between a first and second injection, and that only when the patient's condition is undergoing marked improvement.
5. That the effect of a single injection is greatly enhanced by following it with a course of Iodide of Potash and Arsenic in the usual doses.
6. That patients should be kept in bed after an injection as long as reaction fever lasts.
7. That the dose for age adopted by me in these cases has worked satisfactorily and may be laid down as a safe method:
 - A full dose for an adult
 - A third of dose for a child of twelve
 - Half a dose for a person of 16
 - A full dose for a fairly strong patient of 18 or 19 years.
8. The patients undergoing treatment must be kept under observation for the purpose of watching reaction fever and signs of Arsenic poisoning.
9. That the success of this treatment has been proved by the results and by the fact that inmates frequently volunteer for it and have to be refused as not being suitable cases.

REMARKS.

Having had 30 years experience of Yaws and having completely wiped out that disease from the island Nevis when I was stationed there, I feel that I may perhaps be allowed to express my opinions, on the method of dealing with the native population in stamping it out. I think the first rule to be observed is that coercion must not be employed. It is much better to let the working population see for themselves that it is to their own advantage to undergo the Salvarsan treatment, when they are

assured of this there will be no difficulty. They will come in large numbers and ask for it. But the moment the treatment is forced on them a spirit of antagonism and opposition is stimulated and then the difficulties of dealing with the disease in a country like Jamaica will become very great. Now, happily the method of treatment seems to have reached perfection when carried out with skill and care. I think it will be quite possible to eradicate it.

There is another consideration in the matter which is a most important one. I have noticed in these cases reported above and elsewhere that frequently syphilis and yaws co-exist, and it has now been demonstrated by Bacteriologists that yaws and syphilis belong to the same family the germs of both being very closely allied, it therefore seems to me that any attempt to stamp out yaws should be coupled with similar attempts to stamp out syphilis, or at any rate to treat it in a similar way and by the same means as those used for yaws. To make my meaning clear I say, with conviction, that if we have hospitals for the treatment of yaws we must use those hospitals for the treatment of syphilis. That yaws can be eradicated by the use of hospitals, I myself have proved beyond doubt having got rid of it from the island Nevis where I was stationed 22 years ago. I then had a small hospital of 40 beds and in the course of six years there was, after end of that time, not a single case left in the island, where previously the death rate from yaws had been very considerable.

Dr. Nicholls of Dominica inspected that hospital and can confirm these facts. Since then the hospital has been closed and I have not heard of any serious outbreak of the disease since.

On my arrival here, and on being ordered to take charge of St. Davids district I recommended that yaws hospitals should be opened on the coast but this was not favourably considered on account of the expense it would have entailed, which I regret as the expense since then and now will be many times greater than the original cost.

NEURITIS IN ITS RELATION TO PAUPERISM.

Remarks.—Whilst reporting on cases in the Almshouse it is necessary that I should refer to chronic Peripheral Neuritis which has its home in Jamaica and from the large percentage of cases in the Almshouse, about 20 per cent., would appear to be the chief cause of pauperism and is therefore of the first economical importance.

To find out the exact causes, means of inception and history of this disease has been a subject of constant thought with me for over 20 years, and now that the Bacteriologists have come to our aid it seems not unlikely that in the near future we may be able to speak with more certainty about it than we have in the past.

I have been fortunate in enlisting the interest of Dr. Scott the Government Bacteriologist and Major Harrison, R.A.M.C., of Up-Park Camp, and I propose to supply them with specimens, life histories and any other information required and I believe that these methods of enquiry, if continuously carried out, will eventually settle points of doubt and place us in the right direction of dealing with an evil which is sapping the strength of the population.

The knowledge at present possessed about Peripheral Neuritis is very little, it amounts to this.

It has been stated erroneously, as I think, that it is identical with Beri-beri. That the two diseases have many points of resemblance there can be no doubt, but Neuritis as seen here, lacks many of the essential features of Beri Beri.

From experiments carried out by me on a small scale at the Almshouse it has been found it is capable of improvement in young people, and in the middle aged by regular and wholesome diet quite as well as by medicinal treatment: firstly with quinine, secondly with Iodide of Potash and thirdly with all three drugs.

From this it would appear to be a food disease like Beri Beri, but we do not notice the Dyspnoea and the great and rapid mortality observed in Beri Beri. It may be found to have some connection with the other diseases so common here, viz., Syphilis and Yaws, or in some unknown cause, or it may be found that these diseases pave the way for Neuritis in the same way that it is said to, in the case of Tubercle.

C. R. EDWARDS, D.M.O.

Cases 2 and 11 seem to call for some explanation.

Case 2 was the worst case of Syphilis I have ever seen.

His condition was deplorable and beggars all description. He apparently only had a few days to live. His improvement after the first injection was so remarkable that I was induced to give another injection in about three weeks time. I believe that caused his death, although he showed no signs of arsenic poisoning, but he developed fever which may have been reactionary, and in his weak condition was sufficient to cause death.

Case 11 can be explained by his having had a cerebral tumour of syphilitic origin, which I regret I had not an opportunity of verifying by Post Mortem examination.

C. R. EDWARDS.

Lower St. Andrew, 17.4.14.

Sir,

In reply to your letter No. 588/1069 I have the honour to state:—

(a) that Emanuel Mathias received a second injection of Salvarsan on the 15th July, 1913, and died on the 6th August or 21 days after. This man was buried before I knew of his death. No post mortem examination was held. He suffered from fever of uncertain cause. His physical condition was so bad that he might easily have died from any slight intermediate cause. I am unable to state positively whether the fever he died from was due to the Reaction of Salvarsan. It lasted for about a week and he was treated with quinine.

(b) Uriah Gordon was injected on the 24th November, 1913, and died on 5th January, 1914, or 73 days after. No post mortem was held.

I have, etc.,

Suptg. Medical Officer,
Kingston.

C. R. EDWARDS, D.M.O.

No.	Name.	Age years.	Disease.	No. of In- jections.	Result.	Remarks.
1	Daniel Ennis	20	Syphilis	1	Much improved	Subsequently developed Phthisis and died
2	Emmanuel Mat- thias	40	Very extensive development of Syphilis	2	Much improved after first dose,—a second injection given three weeks after. Reactionary Fever	Died
3	Ellen Anderson	17	Deep ulcer on leg extending to the bone, of seven years du- ration	1	Rapid and complete cure	Is now earning her living as a servant
4	George Freckle- ton	26	Deep chronic ulcer and old scars of ulcers of seven years duration.	1	Complete recovery.	
5	Richard Wright	27	Advanced syphilis with deep ulcers and loss of hard palate	1	Complete check to the disease	
6	Nathan Small	32	Advanced syphilis—Scaly erup- tion on skin and marks of deep ulceration, of seven years duration	2	Complete recovery	Interval of three months between first and second injections.
7	Arthur Mason	22	Chronic ulcers breaking down to deep ulceration, of four years duration	1	Complete recovery.	
8	Jane Pinto	35	Ulcers on legs, arms and fore- arms and hard palate, chronic laryngitis. Has stains on skin of yaws	1	Complete recovery	
9	Alexander Stewart	15	Deep and extensive ulcers all over right leg and foot, of four years duration—stains of yaws	$\frac{1}{3}$	Complete recovery.	Has gone to work
10	Israel Grant	15	Deep ulcer right leg, healing scars on back, large node on left ulna, scars on other parts of four years duration	$\frac{1}{3}$	Discharged cured	
11	Uriah Gordon	17	Yaws tubercles on various parts, crab yaws on soles of feet, badly nourished, of four years duration	1	Complete recovery from yaws, subse- quently was allowed to go out on leave, was picked up un- conscious in the street, remained co- matose for a week and died	
12	George Wilson	52	Chronic ulcer of ten years du- ration	1	Complete recovery	
13	Rampashad (coolie).	10	Yaws	$\frac{1}{3}$	Complete recovery	Gone out to work
14	James Aspinall	12	Yaws and chronic ulcer for two years	$\frac{1}{3}$	Complete recovery	
15	Altamont Minott	13	Yaws and crab yaws	$\frac{1}{3}$	Complete recovery	
16	Adina Wilson	25	Old scars all over both legs, chronic ulcer of two years du- ration	1	Discharged cured	
17	Sarah Hall	40	Extensive syphilitic ulceration and necrosis of bone	1	Discharged cured	Gone to work
18	Lucy Prince	20	Yaws stains, chronic syphilitic disease of nose with loss of bone, also from hard palate	1	Complete check to disease	
19	Thomas Chis- holm	19	Covered with ulcers and scars of ulcers all over legs and arms, right arm had been am- putated for necrosis of bone, chronic periostitis of right Tibia, nutrition very poor, had yaws in childhood	1	Complete check to di- sease and healing of all ulcers.	Discharged fit for work

No.	Name.	Age years.	Disease..	No. of Injections.	Result.	Remarks.
20	Mortimer Nobis	20	Yaws stains, chronic ulcer, contracted tendons and shortening of leg	1	Complete check to disease and healing of ulcer.	Fit for work. Discharged
21	Gertrude Henry	16	Chronic ulcer of seven years duration with Periostitis. Extensive marks of yaws on body and soles of feet	1	Discharged cured	
22	Charles Williams	23	Completely covered all over body with ulcers and scars of ulcers—yaws staining well marked—contracted tendons. Brought in in a very weak state	1	Complete recovery.	
23	James Williams	45	Syphilitic disease of bones of ear with chronic ulceration of some years standing—greatly reduced in strength—case apparently hopeless	1 in- tra- ven- ous	Made great improvement at first then showed dangerous signs of arsenical poisoning. These subsided and eventually there was complete recovery	Discharged fit for work
24	Cyril Reece	20	Chronic ulcer of leg five, years duration. Yaws staining	1	Marked improvement	Not quite cured
25	George Prendergast	45	Chronic ulcer of five years duration—yaws stains	1	Complete recovery	
26	Charles Walker	26	Has lost part of his nose, chronic ulcer on foot. Had primary syphilis 3 years ago	1	Discharged cured	
27	Ezekiel Wrenford	16	Has had yaws for several years	$\frac{1}{2}$	Discharged cured	
28	Augustus Parish	35	Syphilitic disease of nose and palate with loss of bone—yaws stains and chronic ulcers	1	Discharged cured	
29	Caroline Thomson	25	Covered all over body with yaws tubercles varying in size from half a crown to a three-penny bit	1	Complete recovery	Blood specimen taken by Dr. Scott for Bacteriological purposes
30	Lavina Hall	16	Has two chronic ulcers of large size of one year's duration—yaws stains	1	..	Blood specimen taken by Dr. Scott
31	James Faulkner	26	Loss of bone from nose and hard palate—health much impaired		Discharged fit for work	
32	Robert Bryce	18	Has had yaws for some years—Has large smears of yaws on back as big as a saucer—chronic ulcer and contracted tendons. Yaws stains abundant	1	Complete cleaning up of the disease	Fit for work
33	Theophilus Williams	21	Ulcer around nose—destroying a part of it and of upper lip—scaly condition of skin all over body—yaws stains abundant	1	Complete check to the disease—healing of the parts and discharged fit for work	
34	Berty Butler	12	Yaws typical mark	$\frac{1}{3}$	Complete recovery	
35	Leopold Marrow	12	Typical yaws	$\frac{1}{3}$	Discharged cured	
36	Owen Cox	18	Extensively covered with yaws and enlarged femoral glands	1	Discharged cured	
37	Elizabeth Brown	19	Chronic ulcers and extensive yaws eruption	1	Complete recovery	
38	George Johnson	36	Yaws—lungs phthisical	..	Not thought fit for injection	
39	Alfred Moore	20	Extensive yaws and syphilis	1	Much improved	
40	Ezekiel Edwards	27	Extensive ulceration and marks of yaws	1	Great improvement	

OUTBREAKS OF DISEASE.

Stony Hill.—Early in the year there were a good many cases of Colitis in the district—some of a severe type. There was also an epidemic of Mumps, and at the end of the year Influenza.

Amoebic was found in a few cases of Colitis.

Lower St. Andrew.—There were some sporadic cases of Dysentery of the Amoebic variety, but beyond these there has been no great mortality from any special disease. There was a short outbreak of Vomiting Sickness, but it came later in the year, in March instead of January, and there were only 12 cases as against 24 last year. These however were all fatal.

The percentage of Pulmonary Tuberculosis in the Almshouse for the year was 4.3.

Gordon Town.—During the year Malarial Fever of a benign type occurred in people who had returned from Malarial districts and also in residents of Gordon Town.

An outbreak of Typhoid Fever occurred at Tower Hill and Lime Tree in the latter part of January. There were no deaths. The outbreak lasted six weeks. The unprotected springs may have been the cause. After a heavy rain the outbreak terminated.

Hagley Gap.—Three cases of Typhoid Fever occurred, one of which died. All occurred at Penlyne Castle. They all occurred in the early part of September, 1913, and were attributed to the water hole made use of for drinking and every other purpose.

Morant Bay.—Dysentery was somewhat prevalent during the year. 18 cases were dealt with. Type ascertained in 10, 9 Bacillary and one Amoebic.

Golden Grove.—There have been some cases of Bacillary Dysentery.

Manchioneal.—There were 3 cases of Enteric Fever in Belle Castle, none of which died. They occurred in a house which is ill-kept and overcrowded. No Dysentery occurred.

Hope Bay.—Malaria and Dysentery, the latter of which was very prevalent during the months of December and January.

All the Dysentery cases were Amoebic. No Enteric Fever and some Pulmonary Tuberculosis.

Buff Bay.—Dysentery, 28 cases were met with, 13 of which were Bacillary and 15 Amoebic.

Richmond.—Enteric Fever occurred during the year, 11 cases were seen with one death.

One case of Scarlet Fever occurred, the patient was isolated and no other cases occurred.

One case of Vomiting Sickness was reported.

A few cases of Chicken Pox and Mumps were also reported from surrounding districts.

14 cases of Pulmonary Tuberculosis came under observation and were notified.

Port Maria.—Enteric Fever was prevalent, from July to September, 51 cases all told, of which 4 were paratyphoid and 18 deaths.

Malaria was somewhat reduced, probably due to the filling up of swamp lands and to the greater attention being paid to sanitary matters.

The outbreak was traced to one imported case which took place in June, flies and open latrines did the rest.

Dysentery. There were some 10 cases seen, 3 of which were Amoebic and 7 Bacillary.

Gayle.—Cartarrhal Ophthalmia affected several people in the Woodside District. During the months of February and September thirty-three cases occurred.

Nine cases of Enteric Fever were notified.

Two cases of sudden death from so-called Vomiting Sickness.

Some Malaria occurred, the majority of cases of which were of the malignant Tertiary variety.

Pulmonary Tuberculosis 3 cases, 2 deaths.

Dysentery none.

Claremont.—Five cases of Typhoid were notified.

St. Ann's Bay.—Whooping Cough was very prevalent in the early months of the year, but of a mild character.

During July, August and September there was an outbreak of Enteric Fever all from Drax Hall Estate. The cases at Drax Hall were amongst the nomad labourers who came from Buxton at which place there was said to be Typhoid.

Mumps and Influenza were also prevalent as also Malaria, most of the cases of Malaria came from Seville Estate or from its neighbourhood.

Alexandria.—There was an outbreak of Dysentery during last quarter of the year. 70 or 80 cases were seen in all, the mortality was high.

The Parochial Board took the matter in hand.

Typhoid Fever was prevalent all over the district. 21 cases were seen with 3 deaths. Other Practitioners may have seen more.

Brown's Town.—During the months of September to November there was an outbreak of Dysentery chiefly in the Gibraltar district, but it spread to other places.

Later an outbreak of Typhoid Fever occurred at St. Acre.

A number of persons suffered from Dysentery which was chiefly centred in the Gibraltar district, here about 80 patients were seen and 20 deaths. There were also cases at Thickets, Keith and Content, but they were fewer and milder. The duration was about 2 months. The disease evidently spread from contiguous districts in the adjoining parish of Trelawny where it was prevalent.

St. Ann's Bay.—During the Summer and beginning of the Autumn months Colitis was fairly prevalent. In the midwinter months Intermittent Malarial Fever was common. A few cases of Chicken Pox occurred.

Duncans.—A most serious epidemic of Enteritis occurred in the village of Jackson Town sometime in July and spread over the whole district.

An outbreak of Malarial Fever occurred in Rio Bueno and Calabar in January, no deaths occurred.

There was also an epidemic of so-called Vomiting Sickness but was not as serious as former years. Many of the cases were apparently mild.

The epidemic of Enteritis began insiduously and spread rapidly towards the end—invaded about 8 villages—particularly fatal to old people of whom about 75 per cent. died of those attacked—condition like Cholera diarrhoea supervening for several days before death. Mortality high at first owing to faulty methods of treatment adopted by the people.

There were about 350 cases, females suffered more than the males.

Ulster Spring.—There was no outbreak of infectious disease.

There were 9 cases of Amoebic Dysentery with two deaths. The disease was brought here by a man who was working at Green Hill in the lower part of this parish where it was prevalent.

Montego Bay.—The principal sickness, during the year under review have been Typhoid and paratyphoid fevers, Dysentery and Colitis, Malaria Fever and Pulmonary Tuberculosis. Typhoid Fever has been present through every month of the year, no month being specially marked. Dysentery prevailed during the months of July, August, September and October, due to low water supply. Three months were very dry. The people drank water polluted by cattle and pigs. During these months there were over 200 cases of Dysentery. Evidently of the bacillary type as they responded quickly to doses of Saturated Solv. of Magnesia, while Ipecac had more effect. When neglected these cases became chronic Colitis and lingered on for weeks in a weak and emaciated condition, many ended fatally.

There were about 135 cases of Typhoid fevers reported during the year with 18 deaths. Most of the cases were of a very severe type—Hyperpyrexia and delirium, with pneumonia and Thrombosis of vessels—Intestinal symptoms as Hæmorrhage were not well marked in this epidemic.

Adelphi.—There were many cases of Dysentery from July to December (bacillary) of a mild type. Malaria Fever was common after each rainy season, and there were several cases of Mumps, but the only cases brought for treatment were those in which the nature of the disease had not been recognised, and one case of metastatic orchitis.

There were no cases of Vomiting Sickness reported during life, two post mortem examinations were held in February both in York Land.

Cases of acute inflammatory complications of Gonorrhoea, particularly Cystitis, have been more frequent than formerly, many virulent cases being among returning immigrants.

The extended use of Quack Nostrums with which, for this and other diseases, this country is ignorantly permitted to be flooded accounts for many cases of permanent injury from improper medication.

There were about 25 cases of Dysentery treated, but this number is no indication of the incidence of the disease.

Lucea.—There was an attack of Dysentery of a mild type in the western part of the parish during the months from May to September.

Enteric Fever was prevalent during the year, 47 cases were admitted to hospital with 12 deaths. There is no doubt that twice this number of cases occurred in the parish but no steps have been taken outside Lucea to disinfect or isolate.

There was no special locality in which the disease was more prevalent than another.

Four cases of Pulmonary Tuberculosis.

Sav-la-Mar.—The common diseases were Dysentery, Diarrhoea and Typhoid Fever. A large number of cases of Malaria Fever were met with although fewer than immediately after the hurricane.

The type of Dysentery appeared to be milder than that which obtained immediately after the hurricane, but this may possibly be due to the fact that Perchloride of Mercury has been found to act almost like a specific in the majority of cases combined with small doses of Opium, with the most satisfactory results.

The number of cases of Typhoid Fever has been larger than usual, but it must be remembered that the majority of cases came in from various parts of the country to the hospital, Poorhouse, etc.

One case of Pulmonary Tuberculosis in Poorhouse, 1 or 2 died from the disease.

Grange Hill.—An epidemic of Colitis which began in February dragged on until May. On the whole it was much milder than in other districts.

In the Autumn there was an increase of Bronchial trouble, especially among the children.

Little London.—There has been no dysentery.

Bethel Town.—There was an outbreak of Enteric Fever in Bethel Town, from May to July. 11 cases were met with and 2 deaths at Bethel Town and Venture. One patient contracted the disease at Caledonia, and was afterwards brought up to Venture.

69 persons were treated for bowel troubles from July to November, 9 deaths. Some cases of Dysentery. 2 cases of Pulmonary Phthisis and one death. Two cases of acute Lobar Pneumonia. One case of Chicken Pox, Gonorrhoea is common, also buboes and soft Chancres.

Santa Cruz.—Mumps occurred during the year but the people regard it as of no importance, so no reliable information is available as to its prevalence. No deaths.

There are five inmates of the Almshouse suffering from Pulmonary Tuberculosis.

Balaclava.—There has been no outbreak of Infective disease during the year.

Mandeville.—Some cases of Typhoid and Paratyphoid Fever occurred during the year scattered all over the district. Number treated in hospital was 24. The number treated at their own homes did not exceed a dozen. The type of disease was mostly severe, and the mortality higher than usual.

32 cases of Typhoid and Paratyphoid Fever occurred. 7 deaths occurred in hospital and 2 in private practice. Chiefly from July to October. Several of the houses where the Typhoid Fever occurred the surroundings were generally faulty and the drinking water from tanks was not always boiled. No Dysentery.

Newport.—Five cases of Enteric Fever occurred in the district during the time under review. Three of these were in one house. No deaths.

Five cases of Pulmonary Tuberculosis were seen, three of which terminated fatally. The disease is not uncommon in the district and it is believed that many deaths from Pulmonary Tuberculosis have been registered under the name of some other affection.

Christiana.—A few cases of Typhoid Fever occurred, with one death. Four in Christiana, 2 in Mile Gully, 4 in Bombay, mostly all mild.

Chapelton.—During August several persons suffered from Colitis.

Lionel Town.—There was a group of cases of Malarial Fever seen after the spring rains, and only one case of so-called Vomiting Sickness has been seen. Seven cases of Enteric Fever, more cases occurred but were not seen or reported. There were two deaths.

Three cases of Pellagra, two males, both fatal, and one female. 12 cases of Sporadic Dysentery were seen, but no epidemic. The variety was Amoebic.

Crofts Hill.—Vomiting Sickness occurred during month of December.

One case of Small-pox occurred in June at a place called Conners in St. Catherine. 3 deaths from Vomiting Sickness. Dysentery not prevalent.

Spanish Town.—31 cases of Enteric Fever took place, 24 Phthisis, 1 Scarlet Fever, 16 Pneumonia, 3 Cerebro-spinal Meningitis.

In the St. Catherine District Prison 68 cases of Dysentery were treated, with 9 deaths. Amoebic Variety 42, Bacillary 26.

Most of the cases were admitted with the infection, coming from drought stricken districts.

Old Harbour.—Two cases of Typhoid Fever were notified.

There have been no cases of so-called Vomiting Sickness.

One case of Cerebro-spinal Meningitis has occurred and made a good recovery under treatment.

Epidemic Influenza showed its appearance much earlier than usual, some 70 patients were treated. A few cases of Mumps came under treatment and two cases of Pulmonary Tuberculosis have been notified. No Dysentery.

Linstead.—There was an outbreak of Mumps towards the close of the year. It affected a large number but with no mortality.

Port Royal.—No cases of Dysentery.

Return of Infective Diseases reported by Local Boards of Health to the Central Board of Health under the Notification of Infectious Diseases Law 31 of 1912, for the financial year 1913-14.

Parish.	Typhoid Fever.	Pul. Tuberculosis.	Scarlet Fever.	Cerebro-spinal Meningitis.	Pneumonia	Puerperal Fever.	Leprosy.	Diphtheria.	Beri Beri.	Yaws*.	Polio-myelitis.	Septicæmia.
Kingston	294	196	15	3	30	2	3	2	13	10	3	..
St. Andrew	87	57	3	1	2	2	2	..	2	..	..	..
St. Thomas	46	29	..	..	7	1	..	..	..	..	..	..
Portland	63	69	2	..	16	..	..	..	2	..	2	3
St. Mary	105	54	1	1	10	3	..	..	..	..	..	..
St. Ann	54	24	1	..	4	2	1	..	..	..	2	1
Trelawny	9	12	..	1	1	..	2	..	..	..	..	..
St. James	124	24	..	..	1	..	1	..	..	..	..	..
Hanover	89	16	..	..	2	..	..	..	..	..	..	..
Westmoreland	103	24	..	..	11	..	3	..	..	..	..	..
St. Elizabeth	29	24	..	..	9	1	..	..	..	..	..	..
Manchester	62	27	..	..	..	..	2	..	..	..	..	..
Clarendon	28	9	..	2	3	..	2	..	..	..	..	1
St. Catherine	58	41	2	7	21	4	1	..	..	..	1	1
Totals	1,151	606	24	15	117	15	17	2	17	10	8	6

Kingston, 20th April, 1914.

Sir,

I have the honour to submit the following report on the health conditions of the Kingston Medical District for the period constituting the financial year 1913-14.

(1) It is gratifying to be able to record another year of entire freedom from epidemic disease. The health of the city was fairly good throughout the whole year. There was no special prevalence of any particular disease. The rate of sickness both in amount and severity, varied as usual, with the seasons, the rains being accompanied and followed immediately by an increase in the sick rate.

The rainfall was very small—only 16.81'' pts. for the twelve months—and was practically identical in total with that of the previous year, 16.84'' pts.

* Yaws is notifiable only in the parish of Kingston.

The rains however were more evenly distributed than in 1912-13, and so the effects of the drought were less apparent.

(2) The observations which I made in my last year's report respecting the sanitary condition prevailing in Kingston are practically applicable to the present state of affairs but there are two points in this connection to which I desire to direct special attention, housing and overcrowding and the dust nuisance.

The question of house accommodation for the working classes in and about Kingston is a serious one and the sooner it is taken up the better—the amount of overcrowding that obtains in the outskirts and suburban villages is appalling, and if any infective disease which would almost become epidemic should unfortunately at any time invade these localities one shudders to think what would be the result, and what makes matters worse is the unalterable repugnance of the people to letting fresh air into their homes. At night, when all are at home with probably 6 or 8 persons in a room, whose cubic space is barely sufficient for perhaps 2, instead of permitting the air to be changed as often as possible, they deliberately prevent this by closing every door and window and stopping every chink and crevice in the wall. The consequence is they breathe a polluted atmosphere. I am afraid no remedy will be found for this state of things until proper hygienic habitations are obtainable by the people and until it is realised that fresh air even the dreaded "night air" is the friend and not the foe of mankind.

Dust.—As regards the dust nuisance this seems to be matter of grave import to Kingston, from a commercial as well as from a sanitary standpoint. Any expenditure devoted to the abatement of this nuisance, provided it is effectual, would be justified. Dust is unfortunately responsible for a good deal of the ill health and many of the deaths occurring in Kingston annually, and I have no hesitation in expressing the opinion that we shall never have a normally healthy city until we have abolished the dust from our streets and lanes. The commercial interests of Kingston seem to demand some energetic action in this direction for it is hopeless to expect strangers and tourists to visit and remain in a city, where respiration is difficult and dangerous and merchandise and personal effects are subject to serious deterioration.

Refuse Disposal.—For the disposal of refuse, both the Conservancy and Water Carriage system are in vogue—like all partial or incomplete arrangements it is unsatisfactory. A scheme for sewerage the whole city was discussed during the year, and at one time seemed likely to go through, but was eventually postponed, I understand, on financial grounds. It is to be hoped the postponement is merely temporary.

(3) The highest mortality rate occurred during the first four months of the year and was due chiefly to Summer diarrhoea and bowel complaint among children, and diarrhoea and colitis among the aged and infirm.

(4) The meteorological conditions presented no features calling for special comment beyond the fact that drought prevailed almost continuously throughout the year, April, May and September being the only months showing an appreciable rainfall, 2.57," 3.05" and 3.57," respectively.

(5) There were no outbreaks of infective disease of any kind during the year. The usual sporadic cases of whooping cough, measles, mumps, etc., were met with but there was nothing in the nature of an epidemic.

A remark or two however I think would not be out of place with respect to the following diseases:—

(a) *Malaria*—23 deaths were recorded under this head. This indicates that the anopheline has not yet been banished from Kingston. I think however a tribute is due to the successful efforts of the late Malaria Commission in this connection, for undoubtedly the prevalence of Malaria has been greatly reduced. I think the above quoted figures place the city in an unduly unfavourable light, as I feel pretty certain a considerable proportion were imported from outside. At all events I am sure of this, that the majority of cases that I treated came from other parishes.

(b) *Enteric Fever*—This infective fever pursued its usual slow insidious course during the year. It was responsible for 73 deaths as against 84 during the preceding year. No common cause has been traced and so the personal element must be regarded as the chief factor in its incidence.

(c) *Tuberculosis*—The Registrar General's returns show 192 deaths under this head—Phthisis 162, Tuberculosis of other organs 30. This is a sad tale—a precious sacrifice on the altar ignorance and carelessness. If the people would even make the best use of the poorly constructed and ventilated houses which they now possess, there would be some improvement but the system of closing up their rooms at night, to the exclusion of the "night air," which appears to be feared and dreaded like pestilence, is dangerous in the extreme and nothing that one can say by way of advice or exhortation seems to be of any avail. This is one of the big problems that lie before Kingston.

(d) *Venereal diseases*—Only 24 deaths were returned under this head, but this is by no means an index to the prevalence of venereal disease in its various forms. In their acute stages Syphilis and Gonorrhoea are by no means fatal diseases and so they do not bulk largely in the vital statistics, but from my own practice, I can say without hesitation that they are far too common to be regarded with indifference. This is another matter which it seems to me will have to be taken up in the near future. Meanwhile we may await the result of the investigation of the Commission now sitting in England on the subject.

(e) *Pellagra*—While the recorded deaths from this disease were 5 in 1912-13, the number went up to 21 in the year now under review. I do not think this difference is to be attributed to increased incidence or severity of the affection but rather to closer observation and more careful diagnosis. The recent visit of Dr. Sambon to the West Indies has quickened observations in this part of the world. Both the Aetiology and pathology of pellagra are still imperfectly understood, and it is to be hoped the researches of Dr. Sambon and his confreres on both sides of the Atlantic will soon be successful in clearing up all uncertainties and in assigning to the disease its proper position in the hierarchy of medicine.

(6) *Vaccination*—The juvenile population is well protected from Small-pox, weekly vaccinations were performed throughout the year. I dealt with 1,199 successful cases, while many others were done by the several private practitioners in the city.

(7) *Yaws*—This disease is not prevalent in Kingston. I saw 5 cases during the year.

(8) *Hookworm*—I have no idea of the number of hookworm cases in the city. The disease is not prevalent here.

(9) *Lepers*—No register of these is kept. I saw two cases, both of whom were sent to the Leper Asylum in Spanish Town.

(10) *Dysentery*—As far as I know this disease was not prevalent during the year.

I have no means of knowing the number and variety of the cases that occurred.

The usual statistics are appended.

I have, etc.,

LAWSON GIFFORD, D.M.O.

Port Antonio, 18th April, 1914.

Sir,

In reply to circular No. 627 dated the 13th ultimo I have the honour to submit the following report.

It affords me very great pleasure to call attention to the marked decrease in the number of cases of malarial fever treated during the past year. The admissions to hospital for malarial fever numbered 892 as compared to 2,428 cases during the preceding year.

It is difficult to account for this decided falling off in the malarial admission rate. It might be thought that the lessened malarial rate among the coolies was the cause of it, but the falling off was more noticeable among the creoles.

The numbers for the two past years stand as follows:

	Creoles.	Coolies.	Total.
1912-1913 ..	483	1,940	2,423
1913-1914 ..	131	761	892

It might also be thought that the few sanitary improvements that have been carried out, such as the laying of the concrete water tables along the new streets recently taken over from the Titchfield Trust and the filling in of the Bound Brook Swamp may have been the cause of this very satisfactory condition of affairs. As regards the former the people living on the streets are all in good circumstances and never come to the hospital while as regards the Bound Brook swamp this was covered by tidal waters.

I have never found anopheline mosquitoes breeding in salt water.

That some other cause is in operation is apparent from the fact, that few cases of malaria fever have been admitted to the hospital from places where no sanitary work has been carried out, places that hitherto have furnished a considerable number of cases such as Fellowship and Breastworks. Whatever the cause may be it is a matter for congratulation and it is to be hoped that the reduction in the admission rate will be permanent.

Enteric—Typhoid is still prevalent although not apparently as much so as in other parts of the Island. Some 35 cases of Typhoid and Paratyphoid were notified.

That this disease is not more commonly met with is a matter for surprise, in view of the disregard of some of the most elementary sanitary precautions, as regards preventing the spread of the disease i.e., getting rid of flies and the proper disposal of night-soil.

Sanitation—The sanitary condition of the different towns of my district is one I would think that should more properly be dealt with by the Medical Officer of Health for the parish.

Water Supply—A new tank to hold 60,000 gallons of water was completed last month, to supply the wants of the people in the Castle District during times of drought. The district is a fairly populous one, I should not think a matter of 60,000 gallons would go far if the drought were at all prolonged.

The question of an increased water supply for Port Antonio is under discussion frequently. I do not think an enlargement of the present reservoir desirable. It is well known that the water in the present reservoir becomes very disagreeable both as regards taste and colour when it has been allowed to stand for any length of time, although this is not a danger to Public Health it is something that should be avoided. An excellent supply can be obtained from the river that runs through Moore Town by going a short distance in the hills to the eastward of the town, the distance is the only objection a matter of 10 miles of piping.

Waste Matter—No change has been made in the method of disposing of waste matter, carts go about twice each week collecting household rubbish which is dumped to the eastward of the town near the mouth of the Caneside river.

Several years ago I pointed out how desirable it would be to cut a new channel for the Caneside river so as to straighten its course, the matter was taken up but was ultimately shelved as it was found that the cost would amount to, so I understand, £2,000. I should think if the new channel were made the old one could easily be filled in with the refuse from the town. Now that that portion of the town through which the Caneside flows has been so extensively built on the necessity for straightening its course is more urgent than ever, as in the event of one of our old fashioned rains the river might easily bring disaster to some of the people who have built houses along its banks.

Latrines—No change so far as I know has been made in the latrine system, the faecal smell referred to on former occasions is still distinctly noticeable about the eastern end of William Street at night.

Compounds—Some of the yards are filthy beyond description, of course where they are directly under the public eye some attempt is made to keep them clean.

Sanitary Work—The principal sanitary improvements that have been carried out are two, the filling in of the Bound Brook swamp and laying of concrete water tables along the streets taken over from the Titchfield Trust, these have already been referred to in dealing with the question of malaria.

Vaccination—Vaccination has been followed up as closely as possible during the past year, it is an easy matter to induce the small man to have his children vaccinated, but the better classed person gives a great deal of trouble.

Yaws—As regards yaws, the Parochial Board called the attention of the Government to the prevalence of this disease at Moore Town, Nonsuch and Snow Hill. The three districts were visited, 98 cases were treated at Moore Town, 45 at Nonsuch, and 28 at Snow Hill.

They were treated in the ordinary way, the District Constables being instructed as to the distribution of the medicine.

On my submitting a proposal to the Government that I be allowed to give injections of "Salvarsan" to patients at their own homes the Government paying a pound for each case so treated (this is about the cost of treating the cases in hospital), it was subsequently agreed to pay fifteen shillings per case and I was directed to select thirty cases at Moore Town and Norwich for treatment in accordance with this arrangement.

The injections were given early in January, the Assistant District Medical Officer examined the persons a short time ago, and found that all had recovered with the exception of two who were still under treatment.

No precautions have been taken under Law 23 of 1910, my experience is, that the people generally speaking are most anxious that their children should have treatment, with a preference for "Salvarsan."

The District Constables, so far as I know, have been faithful in the distribution of medicines, at any rate no complaints have reached me to the contrary.

A death occurred in the hospital after the administration of an intra-muscular injection of Salvarsan. I shall not go into the details here as it will be dealt with in connection with a special report on the subject of yaws that will be submitted.

The hospital records show that 243 cases of yaws were treated in the hospital during the past year with Salvarsan. Altogether 761 injections have been given to patients in and out of the hospital since April 1911.

The number of syphilitics treated has been unusually large, 127 cases were admitted to the hospital of whom 121 were given Salvarsan intra-muscularly.

Hookworm—It is impossible to state the number of persons who are known to be suffering from Hookworm disease in the district as no record is kept of the cases that come under one's observation as private patients.

The microscopic examination was made of 449 stools during the year as follows:

Creoles 130, Coolies 319—449, of these the positive numbered, Creoles 104, Coolies 214, total 318.

It is becoming more apparent each year that the creole population is heavily infected. Many persons who show indications of ankylostomiasis are found on examination of the stool to harbour hookworm. Anæmia is not always an indication of the presence of the parasite, as cases have frequently come under observation which presented all the clinical features of hookworm disease and the stool on examination has proved negative.

Lepers—There are no lepers so far as I am aware in my district.

I have the honour to be,

Sir,

Your obedient Servant,

C. A. MOSELEY, D.M.O.

Annotto Bay, 19th April, 1914.

The Superintending Medical Officer,
Kingston.

Sir,

I have the honour to acknowledge the receipt of your Circular No. 627.

Disease prevalence—During the financial year 1913-14 there has been no unusual prevalence of any particular disease. At the end of the year 1913 there was the usual rise in the incidence of Malarial fever in the form of both the Benign and Malignant Tertian forms.

Vomiting Sickness—In the month of February 1914 there were three cases of the "Vomiting Sickness." Two were in children at Camberwell, both of whom died on the same day and the third was a case which was brought to my office in convulsions and died before anything could be done. No other cases have occurred.

At the end of the financial year there were a few cases of mumps.

Water Supply—The water supply for the town of Annotto Bay is obtained from three springs which burst out from the rock in close proximity to one another on Fort George at such an elevation as to give a good fall and therefore a good force at the supply area and in sufficient quantity to supply all the demands made on it. The water obtained from this source is of excellent quality and has been described by the present Island Chemist as being "one of the best samples of Jamaica water received at the Laboratory." Unfortunately owing to faulty construction at the intake the water is at times liable to become very dirty when heavy rains are falling and to give a thick deposit on standing.

The intake is on the side of a hill and above it there are a few squatters, consequently there is a remote possibility of the water becoming polluted. I have pointed this out to the Local Board of Health.

The district of *Epsom* and contiguous districts obtain their water from the small stream flowing through them. The district of *Enfield* and all the people residing in the valley which includes that district, obtain their water from the upper reaches of the Dry River. In the district of *Long Road* the people obtain their drinking water and so on from the Annotto River. All the other districts obtain their drinking water from the small streams which flow through them. All these streams contain good and wholesome water but are open to and very liable to all sorts of pollution and hence do not make safe drinking water unless boiled, which the average peasant and labourer in Jamaica will not do.

Refuse—The Parocenal Board has a sanitary cart which removes street sweepings and house refuse at regular periods.

It has been the custom for years now to dump street and house refuse in the low lying parts of the town in Crab Hall along the banks of the Pencar and Annotto Rivers at the south side of the stores along the main street of the town and to the south of the houses and huts in Bottom Bay. In this way a considerable amount of filling in has been done. The system is bad but I think the advantages gained by so doing outweigh the disadvantages of such a procedure and therefore in the absence of any better system I do not condemn it.

Latrines—There is no latrine system at all in the town of Annotto Bay. At the Hospital, Parochial Board Offices, the Constabulary and one or two other places a bucket is used with dry earth or ashes which is emptied at regular intervals. With these few exceptions one finds everywhere *open surface latrines*, the faecal matter is deposited on the surface of the soil on which the latrine is erected and is removed partly by absorption by the soil and evaporation of the fluid portions and the consumption of the solid portions by dogs, rats, fowls, ducks, and crabs. The greater number of these latrines are old, dirty and in a most dilapidated condition.

Drainage—There is no system for the disposal of waste and storm water in the town of Annotto Bay. Unfortunately the town itself and a great part of the lands on Gibraltar and Gray's Inn are so flat and lie so low that the disposal of waste and storm water is a problem which it has not been within the power of the local authorities to solve. A considerable amount of good might be done and the sanitary condition of the houses very greatly improved if a system of concrete drains was laid down. These could be laid along either side of the main street in the central business part of the town with drains running off at right angles from them along the small streets running northward to the sea. In Crab Hall there is a sort of trench at the back of the houses on the north side of the street along which the Pencar River flows when in flood and in which after a heavy shower of rain water collects and by keeping the lands on either side of it damp keeps this part of the town very unhealthy. I have instructed the Inspector of Nuisances to have kerosene oil poured on to any collections of water at intervals of not longer than a week and I have recommended the Parochial Board that a wide concave concrete gutter about 4 feet wide should be laid down from the Pencar to the Missford rivers, with a slight fall from the centre towards either end. The people residing in this part of the town are attempting to fill in this low lying spot by depositing cocoa nut husks and all kinds of debris and rubbish on it but it is a very slow process.

At Top Bay there is a trench which runs from Gibraltar land beneath the railway and main road into the Pencar river, this if it had a concrete bottom and sides would be more efficient.

Overcrowding—Overcrowding in houses is the universal rule. From the hospital to the meanest shack the first thing which strikes one so forcibly is the overcrowding. There seems to be no where sufficient space to accommodate all the people. All the houses are small and even if sufficiently large to accommodate those who live in them, all the cubic space is occupied by massive furniture and large trunks.

There is a part of Annotto Bay known as Bottom Bay which consists of a long string of shacks, huts, and small stores which, apart from being an eyesore are most unsanitary. The dwellings are old, small and crowded together and overcrowding is to be found in every house, dwelling or hut. I am made to understand that the greater if not the whole of this part of this town is on Gray's Inn land and I have made a suggestion to the Parochial Board that representations should be made to the owners of the extremely unhealthy nature of the dwellings existing thereon with the hope of inducing them to make some improvements. If all the dwellings of this part of the town were pulled down and some form of model dwellings erected I feel quite sure they would readily rent at a figure which would yield a good interest on the money expended.

Compounds—The condition of compounds and yards round houses.

This is a matter which requires constant supervision on the part of both the Medical Officer of Health and the Inspector of Nuisances. The yards and premises for the most part are in fair order. In the town of Annotto Bay the difficulty in keeping the compounds in good condition arises through the periodical submerging of large areas of the land partly by storm water and partly by the overflowing of the rivers due to the damming up of their mouths by the high sea-tides and heavy seas which bank up the shingle in stormy weather. This keeps many acres of land in a swampy condition and affords vast opportunities for the breeding of the malarial bearing mosquito.

Mosquito breeding—Owing to the low level of the land and the clayey nature of the soil which does not permit the rain water to soak into it there are very extensive tracks of land in and around Annotto Bay which are always more or less in a swampy condition. The swampy condition of the land is also materially increased as above mentioned by the blocking up of the river mouths. This is especially the case with the Wag Water at Jackass Bay, which is the extreme western limit of the town of Annotto Bay. Here there is a spot where the water from the Wag Water, dammed up by the high embankment of shingle along the sea shore, finds an outlet and there is a constant flow inland.

At Top Bay the owner of Gibraltar is slowly filling in the swamps which lies to the south of the railway line, but at the rate at which it is being done it will be many years before any material good can be effected.

The Public Works Department started cutting a channel through the embankment between the sea and the Wag Water but have now abandoned the work, for the time being at least. What is required here is a powerful sand pump and distributor, such as those used in the construction of the Panama Canal. With one of these appliances all the swampy areas could be in a very short time covered over with sea sand and shingle to a depth of two or three feet after which there would be very little malaria left in Annotto Bay.

The Inspector of Nuisances has instructions to use kerosene oil freely to all collections of water which are stagnant and cannot be drained or otherwise done away with.

Water Pollution—With the possible remote danger above referred to the water supply of the town of Annotto Bay is beyond the possibility of pollution. The water supply of the small villages and districts outside however, are open to every conceivable form of contamination.

Sanitary improvements—No sanitary improvements have been made during the year under review.

During the past financial year there has been no increased mortality from any cause.

There was good seasonable weather right along. There was no unusual period of dry weather and there were no exceptional rains.

Infective Disease—There has been no outbreak of disease infectious or otherwise during the year.

Vaccination—The children of the district are fairly well protected against small pox but I cannot speak for the adult population as secondary vaccination is never carried out.

Yaws—Yaws is extremely prevalent especially among the children. The most common form of it being that known as “crab yaws.”

It is very prevalent throughout the entire district but most so I think in the district of Epsom.

The great majority of the people seem to have had the disease for some time.

No prosecutions have been made under Sections 2, 5, and 6 of Law 23 of 1910.

Since I have not been visiting, the District Constables, notwithstanding that I gave them instructions so to do, have stopped distributing the medicines entirely and although I have sent them instructions to come in and give me their lists of the cases of the disease they are very tardy in carrying out my instructions.

No complaints have been made to me concerning negligence on the part of the District Constables in distributing medicines and I do not think there is much likelihood of there being any, because it is very difficult to induce the majority of the people to undertake any treatment at all.

Owing to the neglect of the District Constables to carry out my instructions I do not think any medicines were distributed at all for the quarter ending 31st March, 1914.

Hookworm.—The number of persons known to be suffering from Hookworm is 119.

Nearly every coolie and the vast majority of the creole population are infected with Hookworm.

Lepers—I do not know of any lepers in the Annotto Bay district. There is no Poor House in the Annotto Bay district.

Dysentery—There have not been many cases of Dysentery, the number is 25.

(a) 18 Amœbic.

(b) 7 Bacillary.

I have the honour to be,

Sir,

Your obedient servant,

H. JOSLEN, D.M.O.

May Pen, April 18th, 1914.

The Honourable,
The Superintending Medical Officer,
Medical Office, Kingston.

Sir,

I have the honour to acknowledge the receipt of your Circular No. 627 dated 12th March 1914, asking for the annual report of the Four Paths District for the financial year ended March 31st, 1914.

Prevalence of sickness in the different seasons of the year, etc.—The public health of the district has been very satisfactory during the last twelve months. No outbreak or prevalence of any disease of a severe type has occurred. Cases of malarial fever have been less prevalent than during preceding years. This no doubt has partly been the result of the small rainfall during the period under review. Isolated cases have occurred here and there but there has been no marked prevalence of the disease. The public health in this respect has much improved of late years. The district is a dry one, free of swamps and almost destitute of water, and does not offer on the whole suitable natural breeding spots for mosquitoes; added to which, the large consumption of Quinine procured from the district Post Offices at very cheap rates, and the free distribution of Quinine in the public schools, has considerably reduced the occurrence of the disease..

Vomiting Sickness—Vomiting Sickness (so called) has been remarkably absent from the district during the year under review. I have not seen any cases and from enquiries made I have not been able to get any history of its occurrence. Why this disease, which was so prevalent last year should under practically identical climatic conditions have been absent this year, I am at a loss to explain.

Remarks on outbreaks of disease infective or otherwise—I append a list of those cases seen by me and reported under Law 31 of 1912.

G. P.	19 years	F	Mocho	Typhoid	22.4.13	Recovery.
M. A.	21 “	F	Mocho	Typhoid	26.5.13	Death.
				(Contracted from previous case)		
A. G.	19 “	F	Smoky Hole	Typhoid	13.6.13	Death.
B. D.	29 “	F.	Cross	Phthisis	10.6.13	Death.
H. D.	25 “	M.	Bird's Hill	Typhoid	12.7.13	Death
			(late Pedro)		(Almshouse)	
H. R.	40 “	M.	Mocho	Phthisis	18.7.13	Death
C. P.	22 “	F.	Almshouse	Phthisis	6.10.13	
C. F.	65 “	M.	May Pen	Paratyphoid	20.9.13	Recovery
				(Contracted in Vere)		
Coolie A	40 “	M.	Almshouse	Phthisis	6.10.13.	Death.
			(sent from Vere)			
G. L. B.	15 “	M.	Tollgate	Typhoid	16.10.13	“
				Contracted(in Porus)		
U. A.	14 mnths.	F.	May Pen	Cerebrospinal Meningitis	8.10.13.	Recovery.
D. F.	8½ “	F.	May Pen	Ditto	12.10.13.	“
G. G.	35 years	F.	Four Paths	Paratyphoid	18.10.13.	“
C. B.	25 “	F.	Ashley	Phthisis	28.11.13	Death
A. L.	25 “	F.	Green Park	Pneumonia	19.12.13	Recovery
G. S.	11 “	F.	May Pen	Paratyphoid	29.12.13	“
S. L.	17 “	M.	Decoy	Pneumonia	11.1.14.	Death
E. P.	24 “	M.	Cross (Almshoue)	Typhoid	7.3.14	Recovery

Case No.	2	probably caught infection from case 1.
"	"	3 source of infection unknown.
"	"	5 was working on Chapelton Extension Railway.
"	"	8 caught infection from a case of paratyphoid in Vere.
"	"	10 got infection probably in Porus.
"	"	13 infection unknown.
"	"	16 injection possibly local, a fatal case having occurred in premises some months before.
"	"	18 unknown.

Protection against Small-pox—545 successful vaccinations were performed during the year: the majority of cases being children under 12 months old. The adult population is practically unprotected against small-pox.

Yaws—Yaws exist chiefly in the mountainous portion of the district, i.e., in the districts of Rock, Smoky Hole, Buxton Hill, Mocho, and Benydale. It is endemic in these districts. During the last quarter of 1913 (Oct.-Dec.) I saw at Smoky-Hole, 18 cases; Rock, 33 cases; Buxton Hill, 3 cases; Mocho, 12 cases, and a few cases, about 12, were reported in the Benydale district.

Some of the people seen for the first time seem to have had the disease for some time previous.

No prosecutions were made under Law 23 of 1910.

As far as I can judge medicine is regularly given by the District Constables: except in one case, and I took him off the work, and recommended that he be not paid.

Whether the medicines are properly and continuously used by the people is more than I can tell. I have no means of knowing. I expect in many cases it is not.

Prevalence of Hookworm.—This disease is prevalent in the district but I do not know the number of persons suffering from it, but I should think a fairly large percentage.

Of 35 specimens of faeces sent up from the Almshouse, 34 cases gave positive results.

Leprosy.—I know of no lepers in the district. If there are any they have not come under my notice.

Two cases of Phthisis died in Almshouse and there is one case there at the end of the year.

Of 35 cases examined, 34 gave positive results for Hookworm.

Two cases of dysentery occurred in the Almshouse of the bacillary variety. Very few cases of Dysentery occurred during the year, only about half a dozen, all I think of the bacillary type.

Report on Sanitary conditions prevailing in the chief Towns and Villages.

1. *Water supply*—May Pen gets water from the Rio Minho above Longville by pipes. This supply is very irregular, owing to frequent breaks, etc., and the water is unfiltered.

Four Paths—Rain water (when there is any) otherwise ponds; or some send to May Pen for water at the nearest stand pipe.

The want of water in the district has been receiving the attention of the Parochial authorities and the Government; and plans are being arranged to build tanks at Rock and Mocho, and to lease the well at Four Paths.

2. *Disposal of Waste matter.*—In May Pen the streets are swept twice a week and the refuse carted away deposited on a piece of land belonging to the Parochial Board. Refuse in the yards is put into barrels and boxes and removed twice a week.

Outside of May Pen, there is no disposal of waste matter other than throwing on to the land or into penguin clumps to rot.

3. *Latrine system*—Very crude. In May Pen and Four Paths, and some villages a few of the houses have latrines mostly of the dry earth type. A few of the better class have buckets. Many amongst the poorer classes have none.

Drainage—Surface only.

Overcrowding—Probably in many of the houses of the poorer classes, but unavoidable.

Condition of compounds and yards around houses—Improved, but much remains to be done. Marked change for the better is noticeable during the last 12 months.

Breeding of Mosquitoes, etc.—Mosquitoes have been markedly less prevalent than during preceding years.

Pollution of water supplies—The May Pen water comes direct into the pipes from the Rio Minho, unfiltered. There is no other water supply. People in the country parts depend on ponds, or wells (shallow) and rain water collected in small surface tanks, all more or less polluted.

Sanitary improvements—In May Pen. 1. Concrete gully below Poor House. 2. Beginning to drain swamp (when it occurs in rainy weather) at back of Nelson's premises. 3. Mr. Elliott's pond drained by Public Works Department.

I have the honour to be,

Sir,

Your obedient servant,

E. R. C. EARLE, D.M.O.

The following is a record of the work done by Dr. Thomson in the X Ray Department from April 1st, 1913, to March 31st, 1914.

Forty-three examinations were made; of these 25 were cases in hospital as patients or from the Out-patient Department.

Fractures 11, dislocations 2, localization of foreign body 1, and the remainder, cases which were treated (Rodent Ulcer, cancer, etc.). Of the 18 cases other than hospital cases—5 from the Military Authorities at Up-Park Camp and Port Royal, all cases of fracture, and one from a steamship. The remaining cases were sent by Medical Practitioners and included cases for treatment (Rodent Ulcer) and examinations in cases of fracture, dislocations, etc. The amount paid in fees was £5 15s. 6d.

I have the honour to be,

Sir,

Your obedient servant,

J. ERRINGTON KER,
Superintending Medical Officer.

Return showing the large and gradual increase that has taken place in the number of admissions to the Country Hospitals during the last ten years.

Hospital.	1904-5	1905-6	1906-7	1907-8	1908-9	1909-10	1910-11	1911-12	1912-13	1913-14
Morant Bay	393	469	510	534	660	531	545	782	730	713
Hordley	387	587	707	555	629	621	537	918	1,294	1,777
Port Antonio	1,257	1,673	1,788	3,359	3,674	3,200	4,288	5,680	6,110	5,170
Buff Bay	2,274	734	654	937	935	755	1,216	1,341	1,961	3,516
Annotto Bay	1,147	3,739	4,313	4,641	5,338	5,005	6,138	5,558	5,169	4,440
Port Maria	1,360	1,610	1,388	1,380	1,584	1,837	2,502	2,627	2,532	1,984
St. Ann's Bay	191	194	252	285	264	219	235	274	414	429
Cave Valley	66	76	87	83	93	91	81	98	101	95
Falmouth	313	238	262	209	252	330	308	276	315	192
Montego Bay	268	302	266	228	228	180	337	494	796	871
Lucea	290	276	224	244	241	237	296	295	284	581
Sav.-la-Mar	228	226	1,026	861	857	800	1,961	1,440	1,989	3,996
Black River	310	274	301	385	321	305	285	316	343	342
Mandeville	287	312	323	259	245	283	281	401	415	377
Chapelton	207	331	480	489	335	344	364	424	530	384
Lionel Town	906	1,533	3,532	2,062	1,852	2,070	1,700	2,547	2,497	2,636
Spanish Town	854	1,160	1,360	1,262	1,260	1,379	1,144	1,544	1,857	1,601
Linstead	150	..	..	..	..	..	121	195	494	458
	10,888	13,734	17,473	17,773	18,768	18,187	22,339	25,210	27,831	29,562

Return showing the various classes of patients admitted to the Public General Hospitals with numbers of each, also the amounts received from paying patients.

Hospital.	Constables.	Paupers on Pauper Roll.	Casual Paupers.	Poor persons admitted without charge.	Poor persons attended as outpatients in con- nect' on with Hospital outpatient system.	Indentured Coolie. Labourers.	Prisoners.	Paying Patients.	Maintenance Dues.	
									Received. £ s. d.	Dues. £ s. d
Morant Bay	18	5	..	372	577	271	3	22	11 15 6	..
Hordley	6	6	..	268	189	1,492	..	12	9 13 6	..
Port Antonio	44	1	..	1,308	9	3,795	3	19	24 14 9	..
Buff Bay	8	5	17	973	492	2,503	1	9	8 8 6	..
Annotto Bay	29	..	..	442	615	3,959	4	6	4 11 0	..
Port Maria	31	6	..	640	612	1,369	1	9	12 6 0	..
St. Ann's Bay	62	..	..	450	972	..	9	4	3 5 0	..
Cave Valley	1	4	15	57	25	..	1	24	11 8 0	0 18 6
Falmouth	17	2	..	165	624	2	2	7	5 19 3	..
Montego Bay	17	2	..	374	1,231	469	2	7	5 19 0	..
Lucea	13	1	..	423	1,391	157	..	5	2 16 6	..
Sav.-la-Mar	30	..	91	282	206	3,555	13	25	21 17 6	7 14 0
Black River	31	..	..	307	1,409	..	2	3	2 6 0	..
Mandeville	17	8	..	373	253	..	4	6	5 9 0	2 15 0
Chapelton	12	..	..	359	559	..	1	12	8 6 0	..
Lionel Town	14	10	138	383	145	2,165	2	7	3 18 0	..
Spanish Town	67	..	808	..	1,122	715	2	9	23 17 8	..
Linstead	1	..	..	441	1,009	37	9	7	3 19 0	3 19 0
	418	50	1,069	7,617	11,440	20,489	59	193	170 10 2	15 6 6.

TABLE NO. I.

Hospital.	Mortality Rate.			Largest Daily No.			Smallest Daily No.			Daily Average.			Date of largest Daily Number of Patients.	Date of smallest Daily Number of Patients.
	Coolies.	Creoles.	Total.	Coolies.	Creoles.	Total.	Coolies.	Creoles.	Total.	Coolies.	Creoles.	Total.		
Morant Bay	1.07	5.27	3.64	6	32	38	2	18	20	6.1	24.7	30.8	20.8.13	13.10.13
Hordley.	.46	4.87	1.2	54	28	82	20	21	41	3.96	.78	4.74	25.3.14	June
Port Antonio	.11	.54	.65	108	82	190	28	59	87	64.48	77.809	142.289	16.10.13	20.6.13
Buff Bay	.67	3.66	1.4	154	70	224	56	42	98	107.98	54.91	162.89	1.12.13	13.4.13
Annotto Bay	.957	7.22	.603	213	41	254	56	35	91	118.1	31.1	149.2	15.12.13	31.3.14
Port Maria	1.001	6.9	2.6	69	33	102	27	28	55	45.6	30.08	75.68	9.7.13	7.9.13
St. Ann's Bay	..	.38	.38	..	32	32	..	8	8	.277	21.671	21.948	..	27.3.14
Cave Valley	..	3.92	3.92	..	9	9	..	3	3	..	5.67	5.67	12.8.13	21.4.13
Falmouth	..	5.2	5.2	1	26	27	1	9	10	..	16.22	16.22	9.5.13	7.8.13
Montego Bay	.67	8.7	4.37	40	42	82	8	24	32	16	34.3	50.3	31.12.13	April
Lucea	..	5.2	3.84	13	26	39	..	13	13	4.3	22.5	26.8	13.11.13	12.4.13
Sav.-la-Mar	.13	9.06	1.36	190	20	210	57	12	69	118.6	22.8	141.4	2.7.13	7.1.14
Black River	..	.8	8	..	31	31	..	11	11	..	21	21	5.5.13	February
Mandeville	..	5.8	5.8	..	35	35	..	15	15	..	29	29	March	December
Chapelton	..	5.98	5.98	..	48	48	..	28	28	..	40.16	40.16	19.4.13	14.9.13
Lionel Town	.8	6.5	1.8	75	48	123	17	22	39	41.5	32.4	73.9	17.4.13	14.12.13
Spanish Town	.16	.74	.48	60	127	187	54	53	107	61.25	77.93	139.18	3.11.13	29.7.13
Linstead	..	2.05	2.05	1	54	55	2	20	22	2.62	32.68	35.3	19.4.13	September

TABLE No. II.

Hospital.	Remaining in Hospital 1.4.13.			Admissions.			Discharged.			Died.		Remaining in Hospital 31.3.14			
	Coolies.	Creoles.	Total.	Coolies.	Creoles.	Total.	Coolies.	Creoles.	Total.	Coolies.	Creoles.	Total.	Coolies.	Creoles.	Total.
Morant Bay	4	24	28	293	420	713	284	424	708	3	23	26	6	27	33
Hordley	28	23	51	1,492	285	1,777	1,459	279	1,738	7	15	22	23	27	50
Port Antonio	70	73	143	3,795	1,375	5,170	3,800	1,332	5,132	6	29	35	59	87	146
Buff Bay	82	49	131	2,583	933	3,516	2,585	880	3,465	18	36	54	62	66	128
Annotto Bay	116	31	147	3,959	481	4,440	3,985	435	4,420	39	37	76	51	40	91
Port Maria	44	28	72	1,454	530	1,984	1,445	488	1,933	15	39	54	38	31	69
St. Ann's Bay	..	26	26	1	428	429	1	397	398	..	17	17	..	14	14
Cave Valley	..	7	7	..	95	95	..	95	95	..	4	4	..	7	7
Falmouth	..	24	24	2	190	192	2	166	168	..	10	10	..	14	14
Montego Bay	8	26	34	469	402	871	442	337	779	3	35	38	24	30	54
Lucea	..	18	18	157	424	581	156	387	543	..	23	23	1	32	33
Sav-la-Mar	84	36	120	3,646	350	3,996	3,565	328	3,893	21	35	56	144	23	167
Black River	..	24	24	..	342	342	..	346	346	..	28	28	..	21	21
Mandeville	..	31	31	..	377	377	..	357	357	..	24	24	..	27	27
Chapelton	..	38	38	..	384	384	..	318	318	..	23	23	..	43	43
Lionel Town.	44	39	83	2,202	434	2,636	2,185	403	2,588	18	31	49	43	39	82
Spanish Town	58	56	114	715	886	1,601	714	811	1,525	12	66	78	47	65	112
Linstead	1	49	50	37	399	436	38	420	458	..	10	10	..	28	28
	539	602	1,141	20,805	8,735	29,540	20,661	8,203	28,864	142	485	627	498	621	1,119

Summary of Diseases treated in the various Hospitals of Jamaica for the year 1913-14.

Diseases.	Cases.	Deaths.	Diseases.	Cases.	Deaths.
GENERAL DISEASES—			B. Functional Nervous disorders—		
Chicken Pox ..	2		(a) Apoplexy ..	10	4
Measles ..	1		(b) Paralysis ..	26	1
Influenza ..	8		(c) Chorea ..	1	
Febricula ..	3		(d) Epilepsy ..	65	6
Scarlatina ..	1		(e) Neuralgia ..	207	
Enteric Fever—			(f) Hysteria ..	31	
(a) Typhoid ..	304	88	c. Mental Diseases—		
(b) Para-Typhoid ..	85	9	(a) Mania ..	8	1
Dysentery—			(b) Melancholia ..	2	
(a) Bacillary ..	338	17	(c) Delusional insanity ..	1	
(b) Amœbic ..	130	6	(d) Dementia ..	11	
Malarial Fever—			(e) Other Diseases ..	4	
(a) Intermittent ..	5,885	29	Diseases of the		
(b) Remittent ..	217	23	Eye ..	402	
(c) Pernicious ..	9	2	Ear ..	81	
Black Water Fever ..	8	1	Nose ..	16	
Erysipelas ..	1	1	Circulatory system ..	198	38
Pyæmia ..	2	1	Respiratory system ..	940	45
Septicæmia ..	20	13	Digestive system ..	1,610	91
Tetanus ..	21	13	Lymphatic system ..	284	
Tubercle—			Urinary system ..	388	53
(a) Pulmonary tuberculosis	122	34	Diseases of the Generative		
(b) Diseases of bones ..	5	1	System—		
(c) Glands affection ..	9		(a) Male organs ..	456	11
(d) Disease of joints ..	3		(b) Female organs ..	442	12
Mumps ..	8		Diseases of the		
Yaws ..	569	1	Organs of locomotion ..	381	3
Syphilis—			Cellular tissue ..	722	7
(a) Primary ..	217		Skin ..	6,408	5
(b) Secondary ..	250	3	Ulcers ..	184	2
(c) Inherited ..	110	5	Injuries—		
(d) Tertiary ..	184	7	(a) General ..	65	12
Gonorrhœa ..	459		(b) Local ..	2,089	30
Alcoholism ..	11		Poisons ..	13	1
Delirium Tremens ..	1		Malformation ..	3	
Rheumatism ..	1,081		Hookworm Disease ..	874	14
New Growth—			Parasites—Infected by—		
(a) Non-malignant ..	68		(1) Anchylostoma duodenale	941	3
(b) Malignant ..	75		(2) Taenia Solium ..	2	
Anæmia ..	164	6	(3) Ascaris Lumbricoides	11	1
Diabetes—Mellitus ..	2		(4) Oxyuris Vernicularis	3	
Debility ..	40	3	(5) Trichina Spiralis ..	1	
Beri-Beri ..	3	2	(6) Filarial Diseases ..	8	
Pellagra ..	11	3	(7) Ringworm ..	27	
Vomiting sickness (so called)	15	1	(8) Pediculosis ..	1	
LOCAL DISEASES—			(9) Itch ..	449	
A. Diseases of Nerves—			(10) Any other variety	4	
(a) Neuritis ..	111	4	Chigoes ..	67	
(b) 1. Meningitis Cerebro			Cinchonism ..	1	
Spinal ..	7	4	No diseases ..	2,707	
(b) 2. Meningitis, other					
varieties ..	2			30,716	617
(c) Myelitis ..	1				
(d) Anterior Poliomyelitis	3		Total number of cases—	30,716	
(e) Congestion of Brain	4	2	Total number of Deaths	617	
(f) Locomotor Ataxia	2		Death Rate %	2.008—	

Summary of Operations, 1913-14.

Operations.	Cases.	Deaths.	Operations.	Cases.	Deaths.
Abscesses—Incision of	434	2	Washing out Stomach	9	
Abdominal Section—			Paracertesis Abdominie	40	
Volvulus of Sigmoid	1		Paracertesi Thoracis	5	
Laparotomy	30	8	Nephrectomy	1	
Gastrotomy	1	1	Intususception	2	1
Hysterectomy	17		Appendectomy	2	2
Oophorectomy	3	1	Hepatic Abscess	2	2
Ovariectomy	2		Aneurism—		
Elopic Gestation	2	1	Ligature of Artery	2	

Operations.	Cases.	Deaths.	Operations.	Cases.	Deaths.
Amputations—			Male generative organs—		
Foot (Symes) ..	2		Paraphymosis ..	14	
Foot (Hayes) ..	1		Slitting up prepuce ..	9	
Leg (Thigh) ..	26		Castration ..	1	
Leg ..	10		Slitting up scrotum ..	1	
Digits ..	51		Radical cure for Hydrocele ..	3	
Toe ..	29	1	Tapping Hydrocele ..	30	
Forearm ..	3		Circumcision ..	170	
Breast ..	14		Chancroids—cauterizing ..	34	
Arm ..	2		Female generative organs—		
Ainhum ..	1		Curetting ..	63	
Penis ..	5		Pyosalynx ..	1	
Hand ..	1		Vesico-vaginal fistula ..	7	
Bladder and Urethra—			Removal of Clitoris ..	1	
Structure—Dilatation of ..	139		Dilating Cervix ..	2	
External urethrotomy ..	1		Removal of retained placenta ..	1	
Internal urethrotomy ..	1		Incising imperforate hymen ..	1	
Perineal section ..	33	2	Peristorrhaphy ..	2	
Perineal abscess ..	10		Ruptured perineum ..	2	
Retention of urine ..	13		Malignant new growth ..	2	
Extravasation of urine ..	2		Rectum and Anus—		
Washing out bladder ..	47		(a) Fistula in Ano ..	10	
Rupture of bladder ..	1	1	(b) Structure of ..	9	
Urinary fistula ..	1		(c) Hæmorrhoids ..	22	
Excision of testicle ..	1		Cauterizing venereal warts ..	2	
Bones—			Spinal puncture ..	2	
Caries ..	4		Resection of rib ..	2	
Necrosis ..	24		Returning gut ..	1	
Osteotomy ..	1		Nails, removal of ..	36	
Periostotomy ..	1		Plastic operation—		
Sequestrotomy ..	25		Mouth ..	4	
United fracture (wiring) ..	1		Penis ..	2	
Eye on—			Hand ..	1	
Pterygium ..	6		Arm ..	1	
Iridectomy ..	4		Dislocations—		
Extract of Cataract <i>cum</i> Iri-			Shoulder ..	6	
dectomy ..	5		Elbow ..	2	
Extract of Cataract <i>sine</i>			Finger ..	1	
Iridectomy ..	2		Jaw ..	2	
Needling Cataract ..	3		Incisions—		
Extirpation of Globe ..	25		Cellulitis and carbuncle ..	46	2
Foreign bodies removed from—			Trephining skull ..	1	
Ear ..	10		Trephining and cleaning mas-		
Foot ..	14		toid cells ..	2	
Nose ..	5		Tendons		
Eye ..	6		Suturing of wounds ..	93	
Hand ..	5		Tenotomy ..	4	
Throat ..	1		Tumours and Cysts—		
Finger ..	5		Carcenoma ..	10	
Wrist ..	2		Antral tumour ..	3	
Shoulder ..	1		Bursal ..	4	1
Thigh ..	1		Sarcoma ..	2	
Face, Nose, Mouth, etc.—			Adenoids ..	15	
Nasal polypus (rem) ..	4		Febroma ..	15	
Compound depressed frac-			Lepoma ..	6	
ture Nose ..	1		Lapilloma ..	1	
Tracheotomy ..	1		Mebomian cyst ..	2	
Hælip ..	2		Cebaceous ..	7	
Tonsils, removal of ..	31		Hæmatocele ..	2	
Joints—			Skin grafting ..	1	
Arthrotomy ..	12		Reduction of compound dis-		
Aspiratory Knee joint ..	1		location of Farsal bone ..	1	
Ankylosis ..	6		Excision of ganglion of wrist ..	1	
Excision of ..	1		Operation for Empyema ..	4	
Reduction of ..	6		Aspirating pleural cavity ..	1	
Lymph Glands—			Examination under Chloroform ..	19	
Excision of ..	94		Excision of veins ..	7	
Scraping and cauterizing ..	5		Scraping chronic ulcer ..	68	
Hernia—			Extraction of teeth ..	461	
Reduction of ..	4		Slitting up sinews ..	32	
Radical cure for ..	29			2,733	33
Hermiotomy for strangulated ..	16	5	Total number of cases ..	2,733	
Fractures—Simple and com-			Total number of deaths ..	33	
pound ..	167	2	Death rate % ..	1.207	

Annual Report on the work of the Bacteriological Department, April 1st, 1913—March 31st, 1914.

The Pathological Laboratory, The Public Hospital,
Kingston, Jamaica, April, 9th, 1914.

The Honourable,
The Superintending Medical Officer.
Sir,

I have the honour to present to you the following report upon the Pathological Laboratory and the work carried out therein during the year ending March 31st, 1914.

The appointment of an Assistant Bacteriologist having been sanctioned at the session of the Legislative Council held in 1913, the Right Honourable, the Secretary of State selected Dr. H. Catto, M.B. B.S., London, for the position, and he arrived in Jamaica in November last year, and I am very pleased, to be able to state that he has already given evidence of his abilities and suitabilities for the post; he has even in this short time proved of great assistance and I feel sure that his help will be most valuable in research into various conditions of disease prevalent in the Island.

I myself went home to England on leave on October 2nd, 1913, and returned to duty on December 23rd. During my absence I took the opportunity of visiting various laboratories in London, and I also did some work in the bacteriological and hygienic laboratories in Dublin, and before returning to Jamaica I took the examination for the Diploma in Public Health.

The number of specimens examined at the laboratory during the year under review even exceeds that recorded last year, namely, 6,697 as compared with 6,194 in my 1913 report.

The appended table (Table VI) shows how this large number is comprised. For the purposes of this report they may be divided into two large groups: I Routine work; II Special investigations.

The first group, Routine work, may be sub-divided as follows:—

1. Enteric Fever.
 2. Blood examinations for parasites—Malaria, Babesia, Filaria, etc.
 3. Fæces examinations for
 - i. Hookworm and other helminth ova.
 - ii. Typhoid, Amoeba of Dysentery, etc.
 4. Urine examinations.
 5. Pus specimens.
 6. Sputa.
 7. Tissues sectioned for diagnosis, etc.
 8. Waters analysed bacterially.
 9. Miscellaneous, including Vaccines, Gastric contents, Effusions, Transudates, Blood cultures, etc.
- The second group, Special investigations:
1. Pellagra.
 2. Streptothrix.
 3. Vomiting Sickness.

I—ROUTINE WORK.

1. *Enteric Fever*—Of the 1045 specimens of blood sent up for Widal's Agglutination reaction 577, or 55.21 per cent., gave a positive result with either B. Typhosus, B. Paratyphosus, or both, compared with 58.22 per cent. last year. Of these positive findings 54.41 per cent. agglutinated B. Typhosus; 33.10 per cent. B. Paratyphosus; while 12.47 per cent. were cases of double infection.

Routine examination of the blood of men at the Spanish Town Prison prior to their being employed in the kitchens or taking any part in the handling or distribution of food, resulted in the finding of a carrier. This man, so far as his history could be obtained, stated that not only had he not had any previous attack, but to the best of his recollection he had never suffered from any fever of a prolonged character at all.

There must always be a certain element of doubt as to the truth of such a history, especially where, as in the present instance, there is no possibility of confirmation of his statements, but, if it be true, this man would be an example of those rare instances of a person excreting the bacillus typhosus without having passed through an attack of typhoid fever; that is, there may be a condition of cholecystitis present due primarily to the bacillus typhosus, such as has been recorded by Guarnieri, Blumenthal, and others. Further investigations undertaken in order to determine whether the excretion of the bacilli was continuous or intermittent revealed the fact that the latter was the case.

I think it right to emphasise once again the fact that cases diagnosed as "paratyphoid fever" (owing to agglutination of B. Paratyphosus in high dilution of the serum) are by no means instances of the comparatively mild affection often seen at home. Many of them are very severe and not infrequently fatal, and clinically a large proportion of them cannot be distinguished from Typhoid Fever.

Seeing then that so large a percentage of these cases give a marked agglutination of B. Paratyphosus, sometimes with, but often without a similar action with B. Typhosus, and that such are equally capable of transmitting the disease, and also that the affection is often quite as severe and serious as an attack of true typhoid fever, it was suggested in my report of September 1912, that both conditions should be made notifiable under the term "Enteric Fever." This view of the question was submitted to the Superintending Medical Officer, who at once agreed to the proposal and he has had this change, or rather addition, made in the Notification Law, so that such are now reported as "Enteric Fever," and where bacterial examination has been carried out, the words "B. Typhosus," or "B. Paratyphosus infection," as the case may be, is added to the certificate. This is not a mere academical distinction, but a point which should be, and, considering the short time the rule has been in force, has been of help to medical officers of health in tracing cases and the sequence of cases of enteric fever.

It was not at all uncommon previously for the medical attendant to take the view that since the case had been diagnosed as one of paratyphosus infection there was no need to notify it "as it was not a case of true typhoid fever" and in consequence they held that there was no necessity to worry the patient or his friends with disinfection procedures. In other words, as a consequence of the case going thus

unreported, no precautions (or very slight and ineffectual ones) were taken, further cases arose, and there were great, if not insuperable, difficulties in trying to trace the source of the outbreak or sequence of cases.

Many instances of the "Eight or Ten Day Fever" in Jamaica are, I am convinced, due to organisms of the Coli-Typhoid group, and, though not due definitely to paratyphosus A. in every case, some instances are to be so ascribed, as evidenced by the high degree of dilution of the serum in which a positive reaction occurs. In other cases agglutination occurs in low dilutions such as 1.30 fairly frequently, and 1.50 not uncommonly. Since a similar result is obtained also with B. typhosus in the former dilution, the organism, one would infer, is a member of this group, and consequently gives rise to a "group agglutination" reaction in the serum of the patient affected. I think that one might even venture a stage further and say that, since the agglutinins for B. paratyphosus are marked in higher dilutions than those for B. typhosus, the organism is probably more nearly related to the former than the latter in these shorter fevers.

The fact that the ratio of positive paratyphosus reactions is this time in excess of that given in former reports must not be taken as implying that this disease is on the increase; the explanation is that many more specimens are sent up from doubtful cases now than was formerly the case. For example, a patient has a moderately severe attack of fever which does not yield to quinine, but constitutional symptoms do not appear to the medical attendant to be so marked as in a true case of typhoid. Formerly "expectant treatment" would have been persisted in, and when the fever disappeared at the 10th day or so, the happy result would be attributed to the line of treatment adopted, and the doctor would congratulate himself on having had the courage of his convictions and in having persisted in the administration of quinine, or antipyretics, and the patient would go away with the idea that his form of malaria was a very obstinate one and that quinine would not act in his case for 10 days. On the other hand, in many cases of typhoid fever of average severity, no specimen is sent up (except from patients in the hospital) the cases being reported on clinical grounds as Enteric fever, without any bacterial examination being made.

Now, however, matters are becoming different, for knowledge of the uses of a clinical laboratory is not confined to medical men, and the patients themselves urge the attendant to send up to "make sure" that what the latter regards as malaria is really such and not Typhoid in an anomalous form. Hence I believe that the increase in positive paratyphosus reactions is to be ascribed, not to the greater prevalence of this disease, but to the larger number of specimens sent up from patients exhibiting an ill-defined course of temperature lasting for over a week.

Before leaving the subject of typhoid and paratyphoid fevers, it will be of interest to say a few words on a peculiar febrile condition which breaks out practically every year at a public institution in St. Andrew. In the words of Dr. Turton, the D.M.O.:—"Beginning about July or August in each year, and 'going on to the end of the year, more or less, cases of continued fever of a particular type have cropped up. There may be many cases in any one year—twenty or thirty—or there may be but one or two, but no year has passed without examples of this occurring. This is the distinct recollection of the superintendent going back over 30 years, of the senior nurse over 20 years, and it is within my own knowledge since 1899."

"It was known before and during my time as the 'bad fever', the name given by the native population to forms of typhoid fever. The clinical picture is that of a 21 days' fever with arch of temperature usually reaching 104°, a tongue slightly furred except at the tip, which is narrow, pointed, and red—so far like a typical typhoid—but there the resemblance ceases. Diarrhoea is unusual, nervous symptoms very unusual. A boy will pass through his attack, as a rule, with the utmost serenity of mind, and can only be prevented from eating anything that he can get hold of, and getting out of bed, by the discipline of the hospital. So that, if these cases are typhoid, they are of a very mild type indeed. The mortality is very small."

Sera from several of the patients exhibiting the above symptoms have been examined on more than one occasion with varying results. Some of them gave partial reactions with both b. typhosus and b. paratyphosus, that is, the bacilli lost their motility and there may have been a tendency to agglutination shown, small clumps of 3 or 4 bacilli seen, but only in low dilution; some gave definite agglutination of one or other bacillus in low dilution; and some gave a well-marked positive reaction.

The excreta were examined on more than one occasion of 12 patients who had passed through a similar attack, in order to find out whether there was a carrier spreading the disease, (if typhoid or paratyphoid), but all with negative results.

I have not yet had an opportunity of taking blood from any of the patients in an early stage with a view to obtaining a culture, but the data so far obtained make one rather incline to the idea that the organism at work in this condition is one of the coli-typhoid group, but not either the true Eberth bacillus, nor the paratyphosus A, and that in some of the cases at least the positive results in low dilution were of the nature of a group-agglutination action, the true causative organism not having as yet been isolated and determined.

2. *Examination of blood smears for Malarial parasites, etc.*—890 of these have been sent up, and of malarial smears by far the majority of those showing parasites contained that of the Subtertian variety, P. Praecox. Quartan and Benign Tertian were both rare, amounting to about 10 per cent. only in each case. In two instances all three forms were present, and in three others P. Malariae and Falciparum were found together.

A few smears were sent up for examination for the Piroplasma Bigeminum, and this protozoon was found in about half the slides. Trypan-blue was used with successful results in nearly all cases, but in some of them the parasites persisted, possibly because too small a dose had been given at first. When this is the case, it is often found that the organism appears to have become to some extent "trypan-fast" and large subsequent doses are ineffectual in ridding the animal of the infection. In a few, again, the preliminary dose apparently brings about the condition of hypersensitiveness, and the second dose results in the production of anaphylactic symptoms, which have in some terminated fatally.

The blood has also been examined from several Pellagra patients, but this question is dealt with later.

From three cases blood smears were sent up which showed *Filaria*. Although Elephantiasis is not very rare, it is not seen, so far as I am aware, in persons who have always lived in Jamaica, and I have not yet met with a case of filariasis in a patient here unless he had been abroad.

Of the three in which the filariae were seen, one had recently returned from Barbados, one was a Haytian refugee, while the third was a student who had been sent over from British Guiana for training.

Four cases of Blackwater fever have come under my notice. In one of these subtertian malaria parasites were found in considerable numbers during the first day but not subsequently. Smears were examined daily from all three but in none of them were any chlamydozoa or cellinclusions discovered such as have been noted by Leishman and others.

3. *Ankylostomiasis*—During the year the large number of 2,566 specimens of faeces have been examined for the presence of ova of intestinal worms, and in 2,191 (or 85.38 per cent.) one form or another has been found. During the first six months the specimens were taken practically haphazard from persons who had not been under systematic treatment for this condition, and so formed a fair estimate of the prevalence of helminthiasis in Jamaica. The results for these six months are stated in Table IV, and show that in 90.27 per cent. of cases helminthiasis was present, and in 84.27 per cent. of positive cases ankylostome ova were found.

During the last six months specimens have been sent repeatedly from the same patients in order to see whether they were still harbouring the parasites, or, in other words, to test the effects of treatment. Naturally, therefore, as one would expect, and as is shown in Table V, there has been some reduction. (Compare Tables IV and V). The reduction, however, is seen to be but small, and one conclusion may safely be drawn from these figures, and that is that the eradication of the pest is not proving the comparatively simple undertaking which many imagine it to be. To find the ova in the faeces and in consequence to order the dispenser to prepare a dose of Thymol, is nothing less than playing with a disease which causes untold misery and inestimable incapacitation among labourers on the various plantations.

The results given also tend still more to drive home the lesson that however adequately the individual members are dosed with thymol, recurrence must take place so long as the soil remains infected, and that even if the soil were once rendered free from the larvae, reinfection of it must inevitably occur so long as untreated coolies are brought to this country and sent up to the districts to spread the condition broadcast. *Ankylostomiasis* will never be stamped out amongst the coolies unless:

- i. Immigrants are treated on the voyage so that they land here free from infection; or, if this for some reason or other is not found practicable,
- ii. They are kept at a base depot until repeated examination shows them to be free from the parasite before they are sent up country. It is true that they undergo a course of thymol treatment now at the quarantine station, and this is certainly an important step in the right direction, but it does not go far enough. As has been shown by our examinations of specimens sent from some estates, in some cases three, four, or even more courses of thymol are required to free the patient.
- iii. Adequate latrine accommodation is provided on the estates.
- iv. Care is taken that such latrines are used.

Lastly, my examinations show again that thymol is not an efficient anthelmintic for trichuris. Specimens, which had shown these as well as ankylostome to be present, and which had been sent up repeatedly from the same patient in order that it might be known whether the latter had been expelled as a result of thymol, proved abundantly the fact that while the latter became less and less, even to complete disappearance, the former showed very little diminution. Clinically, therefore, one is led to expect what my figures themselves show, that from statistics drawn up for the first six months of the year (April—September, 1913) 49.46 per cent. positive results contained *trichocephalus* ova, while for the whole year the number of specimens in which these were found works out at 49.13 per cent. In other words, though the general helminthiasis shows a reduction of 5 per cent., and ankylostomiasis of nearly 3 per cent., *trichocephalus* is only reduced to the extent of 0.3 per cent.

Ascaris infection also is very common here. Not infrequently one sees 20, 30, and even 50 ova in a single field. This, apparently, is not regarded as of any importance, in spite of the fact that a large proportion of deaths (in vomiting sickness for example) is ascribed to it. The prevalence of this worm is extensive, being found in 39.87 per cent. of positive specimens sent up for the year. Moreover, more detailed analysis tends to show that this is increasing, since during the first six months, it was found in 36.77 per cent., whereas during the last half year it was present in 42.37 per cent. This should not be so, as it is one of the easiest worms to eradicate.

4. *Dysentery*—During the first half of the year under review there was considerably more dysentery than usual in the island. The disease was not limited to any particular district and was not actually epidemic. Such outbreaks (or perhaps the condition of things would be more correctly described as an increase in the number of cases) are said to arise in Jamaica after a disaster such as a hurricane. A severe hurricane visited the island at the end of 1912, and whether the spread may be ascribed to the consequent exposure, bad hygienic conditions, closer contact, and so forth, I am unable to say. Many examinations of the water supplies of the districts affected were undertaken but there was no indication that the spread of the disease was due to the water, but more to personal contact, uncleanness, and flies.

The affection was of several varieties; amoebic, bacillary, lamblial, and balantidial forms occurred, the former two preponderating, and the first more often met with than the second.

Several cases reported as dysentery, merely because of the frequent action of the bowels, were probably only cases of colitis of a non-specific nature, due to irritating ingesta, such as unripe fruit.

In three instances *balantidium coli* was found in large numbers in the faeces; in five the *lamblia intestinalis*; while in four *trichomonas intestinalis* was present. All except one of each of the latter occurred in children.

The opinion was formerly held that the amoebic form of dysentery was not seen in Jamaica. The main reason for this statement seems to be the unsatisfactory one that liver abscess is very rare and that this would not be so if the variety of dysentery present were amoebic. This is a most fallacious argu-

ment; it would be quite as legitimate to argue that enteric fever was uncommon because cases of perforation are seldom met with. In reply to this two points may be advanced:

Firstly, true dysentery of all kinds exists to a smaller extent than one would think, judging by the returns. Where the diagnosis is made (as it is in the vast majority of instances) from clinical conditions only, many cases of ordinary acute colitis of dietitic origin are returned as dysentery. Thus, from 268 specimens from patients who had been reported as suffering from dysentery, in 162 neither the amoeba nor bacilli of dysentery could be found; that is, results were negative in 60.44 per cent. Possibly, nay probably, in some cases one or other was present, but escaped detection, although most careful examination and cultural attempts for isolation of the bacilli were made; nevertheless, the opinion is fairly justified that more than half the cases reported as dysentery are not true dysentery at all.

Secondly, liver abscess does occur and is probably not so uncommon as practitioners in this island have believed. In support of this statement two cases in August and September came to my notice. Both of them had been sent to the hospital definitely diagnosed as right-sided empyema, but both turned out to be hepatic abscess. There is no reason to suppose that such cases are limited to Kingston, and undoubtedly in country districts, where only minor operations are performed, such would be diagnosed as empyemata, pus would be evacuated through an intercostal space, and if the patient recovered, nothing further would be thought about it; whereas, if death occurred, the probabilities are that no autopsy would be held as the diagnosis had already been made. Two cases are worthy of special mention, though the details need not be given in full. They were instances of liver abscess rupturing through the diaphragm into the lung, the pus being expectorated. The sputum being sent up to the laboratory, the amoeba of dysentery was discovered. Emetine was administered and both patients made excellent recoveries without operative measures.

The remainder of the routine examinations do not call for any special remarks, or detailed description. The numbers of them which have been examined are set forth in Table VI.

II—SPECIAL INVESTIGATIONS.

1. *Pellagra*—Dr. Catto and myself are undertaking an investigation into the morbid anatomy of Pellagra. There is a considerable number of these cases at the Asylum in Kingston, but I regret to say that it is a very difficult matter to obtain reliable histories of such patients. In many of them it is impossible to say, for example, whether their mental condition is an outcome of the pellagra or whether one is dealing with pellagra supervening in an insane subject. The investigation is only in its inception. We have commenced by taking specimens of blood at various stages of the disease, and from extensive leucocyte enumerations, fail to find any alteration common to them. 500 leucocytes are counted in each case. No useful purpose would be served by giving the details of each one, but the minimum, the maximum, and the average of each variety of cell will be stated, thus showing the variations which may occur.

	Polymorph.		Large Mono-nuclea.	Transitionals.	Lymphocytes.			Eosinophile.	Basophile.	Myelocyte.
	Normal	Stab-kernige.			Small.	Large.	Türk's			
Average. Minimum. Maximum.	49.8	2.6	5.5	1.7	24.1	7	1.2	9.5	0.5	0.1
	52.4		5.2		32.3			9.5	0.5	0.1
	73	3.8	7.4	2.6	31.8	12	3	19.6	1.2	1.0
	76.8		10.0		46.8			19.6	1.2	1.0
	31.4	1.0	1.9	1.0	8.6	1.8	0	0.6	0	0
	32.4		2.9		10.4			0.6	0	0

It is thus seen that the variations may be very wide, but the average agrees except in one particular fairly closely with what has been found elsewhere, as for instance by the Illinois Pellagra Commission, which gives as an average: Polymorphonuclears 57.23 per cent., Large Mononuclears and Transitionals 3.43 per cent., Lymphocytes 34.22 per cent., Eosinophiles 4.5 per cent., Basophiles 0.67 per cent., as compared with our figures of 52.4 per cent., 5.2 per cent., 32.3 per cent., 3.5 per cent., and 0.5 per cent. respectively. The striking difference occurs in the degree of Eosinophilia in our cases, and that is explained by the enormous prevalence of helminthiasis in this island, a matter which I have treated of in this report.

It is of importance to bear in mind the fact that in the insane there are possibilities of so many conditions which will tend to upset the normal proportions of the different leucocytes to one another; as, for instance, the presence of intestinal parasites, small wounds, intercurrent diseases, and so forth. But, when comparing the counts in subjects in about the same stages of the disease and of a similar degree of severity, we have been driven to the conclusion that there are no characteristic variations of sufficient constancy to warrant any serviceable inferences.

2. *Streptothrix*—In two cases exhibiting the symptoms of tuberculosis of the lung from whom specimens of the sputum were sent up for examination for the bacillus, I was unable to detect any of these organisms, but saw under the microscope some filaments of a streptothrix.

The patients showed local physical signs in the upper lobe of the left lung in the one case, in the middle lobe of the right in the other, and clinical symptoms of cough with evening rise of temperature. Repeated examinations failed to reveal any tubercle bacilli, but each time pieces or small masses of thin, branching mycelium were seen. These, on staining by Gram's method, stained a little irregularly, giving somewhat of a granular appearance; the threads were not acid-fast, though here and there in the length of a thread, appeared a small fragment which retained the stain.

I obtained a growth in liquid medium—peptone broth—but growth was slow. In this it appeared as small dots at the sides of the culture tubes, while a deposit consisting partly of similar mycelium was seen at the bottom.

Growth in the broth was obscured by the more rapid development of bacteria. I tried plating on various solid media in order to isolate the organism, but did not succeed. I was able, however, to carry it on through three broth cultures in one case, and four in the other, but no further. It is well known that in some cases of *Streptothrix* growth is not to be obtained on any other artificial medium in ordinary use, and in the cases mentioned I could not make out any on nutrient agar. If it did develop at all, it was obscured by the more abundant growth of accompanying bacterial organisms. Both as regards its source of origin and its appearance in the peptone broth it most nearly resembled Foulerton's *Streptothrix Hominis* I.

I have made special mention of these cases, because it is more than probable that a certain proportion of those giving physical signs of tuberculous infection, but without any family history of this disease, and without corroboration by the finding of the bacillus tuberculosis in the sputum, are cases of streptothrix infection.

3. *Vomiting Sickness*—During the last six months Dr. Seidelin's report upon his investigations into this disease has been published, and before going on to describe the cases which I have met with this year, I would like to make a few remarks on the bearings which my own investigations have had in leading me to agree with or dissent from his conclusions.

He states:—"Either some observers have overlooked mild forms of the disease, or others 'have included cases of a different nature the latter seems the more probable." (p. 14). This statement I certainly agree with, because it has been my experience to find that any case of a child who vomits, whether at the onset, or during the course of an illness, is put down by the laity and sometimes also by the medical attendant as one of vomiting sickness, if it occurs at the season when this disease is prevalent (Dec.—March). Also, some cases are reported as "Vomiting Sickness without Vomiting," and others are definitely recorded as vomiting sickness when none of the usual symptoms of the disease are present. One case in point I may mention, and I have no reason for regarding it as unique. I was summoned to carry out the post mortem examination of a child who had been reported at the local police station as suffering from vomiting sickness, a record of cases occurring in that part of the district being kept there. The case was that of a marasmic infant. The autopsy revealed none of the usual signs of vomiting sickness. On questioning the mother afterwards as to the history and symptoms, it turned out that the child had been wasting for over 3 months, had never had any vomiting or convulsions, but had "simply faded away." When I asked the reason for its being reported as vomiting sickness, the parents informed me that medicine could be obtained free at the police station for vomiting sickness patients, and, since to many, medicine, regardless of diagnosis, is the main use of the physician, the case had been reported as one of this disease by the parents in order to obtain free medicine.

As regards the other alternative in the statement above referred to "mild forms" of the disease, these are exceedingly rare in all the districts in which I have met with it; certainly not so numerous as to reduce the case mortality from 75 per cent. (Seidelin's figures) to 2 per cent. (Tillman's estimate). My own figures up to the end of March 1913, work out a case mortality of 81 per cent., and I may add that this year, out of 20 cases reported to me, only two have recovered, giving a mortality of 90 per cent., or deducting those for which other causes of death may be given, or in which the symptoms were not those usually characteristic of vomiting sickness, there were two recoveries out of 16 cases, or a mortality of 87.5 per cent. Also of those seen by or reported to me, less than half a dozen could be justly spoken of as "mild"—clinically speaking—unless by the term is meant "rapidly recovering," because, as the histories previously reported by me of 184 cases have abundantly shown, those appearing but little indisposed at the beginning of the illness may suddenly be attacked by convulsions, become comatose, and die in a few hours. Of all the cases seen by Dr. Seidelin five or possibly six might be described as mild, and this experience coincides with my own. The inference is, therefore, that the weight of evidence is strongly in favour of the second alternative, that those who report such a low mortality have included cases of a different nature (different, that is, from true vomiting sickness).

As regards the term "Black Vomit" as one of the synonyms of the disease, I think that this is an error and should no longer be retained; of over 200 cases reported to me in detail, only two had any vomiting so described, and amongst those seen by me personally I have never met with a case in which the vomit was black, and if employed as a synonym at all, it is, I feel sure, the one used least frequently. The vomitus in all whom I have seen has been in the main mucoid, watery, or frothy, while very occasionally, if there has been much straining or retching, it may be pinkish from admixed blood.

Dr. Seidelin's remarks on p. 21 of his report on the question of "emaciated subjects" agree with my own experience. Nearly all the cases which I have seen have been fine, well-nourished children. On p. 23 he refers to the organisms present in some of the cases. It was owing to the varied sugar reactions of the Gram-negative diplococci isolated in different cases that in my report of March 1913, I expressly gave as the title of Table II, "Cases in which a Gram-negative diplococcus was isolated from the cerebro-spinal fluid" and purposely avoided calling the organism the meningococcus, except in the first series—the Peart cases—in which the typical meningococcus reactions were given.

The points put forward on pp. 86–87 of his report appear to give the quietus to the Yellow Fever theory, viz.,

- i. The class of persons attacked—the native population only, never foreigners;
- ii. The age of persons attacked—Yellow fever in children usually a benign disease, whereas in vomiting sickness, in my series of cases, 65.57 per cent. occurred below the age of six years, with a percentage mortality of 80;

- iii. The seasonal prevalence—becoming rare or dying out in the hot and rainy seasons, and becoming epidemic during the cool and dry winter months;
- iv. Duration of the disease. In the cases of yellow fever mentioned in his Yucatan report, death in the majority of severe cases occurred on the 5th, or occasionally on the 4th day of disease, whereas in my series of 184 cases of vomiting sickness the average duration worked out at $14\frac{1}{2}$ hours.
- v. "The classical clinical symptoms of fatal yellow fever—fever, black vomit, jaundice, and anuria—are almost constantly absent." (p. 86).

In my own defence I would like to state a few facts with reference to Dr. Seidelin's remarks on p. 88; "the evidence is that meningococci have been found by Scott in the cerebro-spinal fluid in a considerable number of cases of vomiting sickness. Scott himself, however, in his latest paper is less positive," etc. This arose from the fact that the first cases actually seen by myself were the "Pearl" series in September, 1912, which were definitely instances of cerebro-spinal meningitis. Later on, as I became better acquainted with vomiting sickness, it was obvious that cerebro-spinal fever and vomiting sickness were two distinct affections, though with certain more or less closely resembling symptoms or perhaps it is better stated by saying that under the term "vomiting sickness" had been grouped, cases of cerebro-spinal meningitis (which occur in small numbers) and in far greater numbers cases of vomiting sickness proper.

The fact that Dr. Seidelin has not solved the problem of the causation of this disease does not detract from the usefulness of his report, though of course the solving of it would have enhanced its value. It is an exceedingly fair and impartial statement of our knowledge of the disease up to the time of his leaving Jamaica.

This year the disease has been exceptionally limited, for whereas by the end of March, 1913, I had 185 cases reported to me, and specimens had been sent up from most of them, this year I have had reports of only 20. Several of these occurred within a few miles of Kingston so that I had the good fortune to be able to investigate them at first hand.

A few details of each of them will be given. Dr. Lofthouse, D.M.O. of Balaclava, has reported three cases;

1. E. C., female, aged 6 years. Apparently quite well till 11 a.m. January 8th, when she suddenly felt ill and lay down. Shortly afterwards she began to vomit; she vomited twice, then passed into a comatose state and died without recovering consciousness at 6 p.m. She had no convulsions. Duration of illness 7 hours.

No statement was given as to the previous meal, character of vomit, etc. The post mortem findings reported in this case were by no means typical, and I had no means of verifying them as no tissues were forwarded to the laboratory.

2. E. L., male, aged 6 years. "Sudden onset of illness with vomiting which was repeated; the patient then passed into a comatose state." Death occurred 2 hours after the first onset. At the post-mortem examination some round worms were found, but the only point worthy of note apparently was that the "spleen was very large." No cause of death revealed at autopsy."

3. K. L. W., female, aged 2 years. Apparently well till 6 p.m. March 21st, when she cried out and had a fit, lost consciousness, and died at 9 p.m. Duration 3 hours. There was no vomiting at all. At the autopsy, $15\frac{1}{2}$ hours later, the only abnormality recorded was that there were "dozens of round worms (ascarides) in the intestine."

This case ought not, I think, to be included. The diagnosis at any other time of the year would have been "Infantile convulsions associated with intestinal worms," but because death occurred in 3 hours and during the cooler months, it is reported as "Vomiting Sickness without vomiting." (see above).

One case has been reported by the D.M.O. at Gayle:

4. J. W., male, aged $2\frac{1}{2}$ years. Suddenly seized with vomiting and convulsions at 6 p.m., March 19th; became comatose and died at 9 p.m. Duration 3 hours. Autopsy carried out 36 or more hours afterwards, and report states that "except for 20 round worms in the intestines and slight congestion of meninges, nothing abnormal found."

From Falmouth eight cases have been reported to me:

5. A. L., female, aged 6 years. Duration of illness 8 hours; not seen during life.
6. H. C., female, aged 27 years; mother of last. Started to vomit on morning of February 5th and this symptom persisted till she came to hospital on the afternoon of the following day. Vomiting ceased next day and patient made good progress. Duration about 48 hours.
7. B. C., female, aged 15 months; lived about 200 yards from last. Started to vomit at 11 p.m. February 6th, and was brought to the doctor 2 hours later; the vomiting ceased almost directly after, and the child returned home the same morning quite well.

There is very little reason for calling this a definite case of vomiting sickness. It is true there was vomiting, but none of the other usual symptoms, convulsions, loss of consciousness, etc.; and children of the age of this patient may readily vomit from a variety of causes. Probably nothing would have been heard of this had not the previous two cases occurred close by.

8. P. W., male, aged 6 years. Said to have vomited *once* only, and shortly afterwards lost consciousness and died in two hours. No other details given. I do not think this patient was seen by a medical man.
9. C. N., male, aged 4 years. "Vomiting, convulsions, and death." Duration 4-6 hours. Not seen during life by a doctor; at the post-mortem "intestines packed with round worms, forming almost impassable masses in parts of lower ileum." Nothing else abnormal noted.
10. D. C., male, aged 11 years. The history in this case is unusual, both as regards length of disease and sequence of events. Complained of "bad feelings in the stomach" early on February 25th, refused food during that day, and went to bed still complaining. During the succeeding night he vomited once, then lost consciousness and died about 20 hours after the first sensations of illness.

11. L. W., female, aged 6 years. This patient also did not give a typical history. She "began to have fits" during the morning of February 27th, and lost consciousness; then vomited twice and remained unconscious till death. Duration 4 hours.
12. W. S., male, aged 7 years. Suddenly taken ill with vomiting at 2 a.m. on February 28th and this symptom continued till death three hours later; no statement as to the presence of convulsions, coma, or as to the physical conditions. Probably not seen by a doctor during life.

We now come to the last series of eight cases; of these I am able to give fuller notes because they all occurred within a short distance of Kingston and I was able to perform the post mortem examination in each case myself.

1. J. E. B., male, aged 3½ years. Apparently well on February 12th, when he vomited three times, without effort, after taking food—vegetable soup. He did not seem ill and kept trying to take the soup, but each time brought it up again. Later he had some tea and this he retained; "quite himself next morning." No other symptom (appeared quite well and took food as usual) till 7.30 a.m. February 14th. Then he complained of not being well, but had no pain. He got up and lay down on the ground. Between 8 and 8.30 a.m. his mother went to take him up and found him in a fit—arms stiff, hands clenched and shaking. He had no more vomiting but these "spasms" recurred frequently and the child never regained consciousness. Pulse soft and regular; respiration natural. No Kernig's sign, no rigidity of neck muscles. He was brought to Dr. Edwards at 2 p.m. and died at 3.30 p.m. Duration from first vomiting about 44 hours; intermission of 36 hours, during which he seemed quite well; final attack 8 hours. No others in the family attacked. The post-mortem appearances were very typical of the non-meningitis cases and need not be described in detail here.

With reference to this case I received a telegram at 2.30 p.m. and immediately went to the case, arriving just at the moment of death, and was thus able to take specimens of the blood from a vein in large quantities of broth for culture, and also to make cultures of the cerebro-spinal fluid taken by lumbar puncture. I returned immediately to the laboratory and placed all the cultures in the incubator, half of them aerobically and half anaerobically.

Blood cultures I had never before had the opportunity of making under conditions in which one could be certain of ensuring against accidental contamination; nor had Dr. Seidelin any opportunity of making cultures of the blood and spinal fluid and incubating both aerobically and anaerobically. The cultures were all kept for over a week, and two of them for three weeks, but no growth whatever occurred in any of the tubes or flasks.

2. D. G., male, aged 3 years. Apparently quite well till 3 p.m. February 15th, when he vomited; then recovered and played till going to bed at 7 p.m., woke up at 10 p.m. and called for water vomited and again went to sleep. Shortly afterwards he was heard to groan, and at 11.55 p.m. was seized with convulsions and died an hour later. Total duration 10 hours, with interval of 7 hours' calm period.

I did not see this case till the autopsy, 13½ hours after death. The cerebro-spinal fluid was clear, flowed drop by drop and on culture on nasagar yielded a Gram-negative diplococcus which gave rise to acid in glucose, maltose, and galactose, and after 4 days a faintly acid reaction also in mannite.

3. C. L., female, aged 1 year. "Attack of vomiting just before 6 p.m. March 3rd, followed by convulsions; died in 15 minutes." Said to have always been subject to vomiting; had teething trouble. Duration 15 minutes.

No history could be obtained as regards diet, but this case, from the extreme rapidity and from the history of vomiting and gastric trouble since birth, was probably an ordinary attack of infantile convulsions, very likely arising from dietetic irregularities, rather than a case of true vomiting sickness.

4. L. R., female, aged 2 years. All the history obtainable of this patient was that she was taken ill at 4 a.m., March 4th, with vomiting. Fits supervened at 5 a.m., and lasted till death which took place shortly before 6 a.m. Duration 2 hours.
5. O. F., female, aged 25 years. Was taken ill at 5 a.m., March 9th, with 'vomiting and fits' was given warm milk and appeared to be quite well during the remainder of that day, but vomited again during the evening of the 9th. Fits recurred, followed by coma and death at 9.30 a.m., March 10th. Her child, aged 4 years, was said to have died with similar symptoms after an illness of one hour on the previous day (9th).

Cerebro-spinal fluid smears and cultures taken. From the latter Gram-negative diplococci developed, which were inclined to grow in chains. This organism produced acid but no gas in Dextrose, maltose, and galactose in 48 hours, and after 6 days slightly also in mannite and raffinose. The diplococci were also seen in stained sections of the cerebral cortex.

6. M., coolie, aged 3 years. Went to bed well on the evening of March 10th; meals that day consisted of fresh pork (but one of the parents said "salt" pork) for breakfast, rice and peas in the evening. Woke at 3 a.m. March 11th, cried out, but did not complain of any pain, and had a fit. These succeeded one another rapidly till 6 a.m., when the child vomited yellow, "bilious" matter, then became comatose and remained so till death. Duration 6½ hours.

The history of this case is a little unusual in that convulsions preceded the vomiting by some 3 hours. This is the only case too where any details as regards the nature of the preceding meal have been obtainable. On one's attempting to elicit this information the native immediately puts himself on his guard, I presume because he thinks that he may get into trouble if there is any suspicion of poisoning, and the almost invariable reply is "usual food," or "milk," or "pap," or "the same as ourselves." This is in many cases, I am sure erroneous.

7. L. W., female, aged 21 years. History of having been subject to fits. Last evening, March 16th, at 6.30 p.m. she had a succession of these fits, from which she never recovered, remaining unconscious throughout until death at 8.30 p.m. *There was at no time any vomiting.*

This case should not, in my opinion, be reported as one of vomiting sickness at all. It was probably a case of epilepsy of long standing, terminating in status epilepticus and exhaustion.

8. S. N., male, aged $2\frac{1}{2}$ years. Said to have been taken ill at 4 a.m., March 15th, with vomiting and diarrhoea, and died at 6.30 p.m. the next day. Duration $38\frac{1}{2}$ hours. No history of any convulsions, etc.

This patient was not seen during life by any doctor. No details of the history were obtainable; the post-mortem examination was not made till 40 hours after death, when decomposition had set in. The only reason for including it in this list is that it was reported as a case of vomiting sickness, though on further enquiries I found that the authorities for this were only the parents and the constable at the local police station.

The stomach was found congested (petechial) more towards the pylorus, and the upper part of the small intestine showed similar changes; and the case was very likely one of acute gastro-enteritis.

As regards age and sex the cases this year agree almost exactly with those of last. Thus, no cases occurred under the age of one year; only 3 between the ages of one and two; 5 were three years old, 2 were of four years, and 5 between the ages of five and six. Over this age one each occurred at 7, 11, 21, 25, and 27 respectively, so that 75% were six years old or under.

With regard to sex the cases were exactly divided; ten being male and ten female.

Only in one instance, that of D. G., was a diplococcus obtained from the cerebro-spinal fluid giving the morphological and cultural characteristics of the meningococcus; and this was not quite typical in its sugar reactions, producing faint acidity in mannite after 4 days.

In another case, that of O. F., diplococci negative to Gram, but a typical intending to grow in chains and in producing acid in mannite and raffinose, were present.

I wish to state that in dealing with the morbid anatomy Dr. Catto has been of great assistance in this part of the investigation, for it would have been impossible to carry out both the bacteriological and anatomical researches unaided. He has, therefore, undertaken the work of cutting and staining the sections of the various tissues and organs, and I am greatly indebted to him for the ability with which he has performed this part of the work.

Although the cases this year have been few in number, only about one-tenth of those reported to me last year, nevertheless they occurred in such close proximity to the laboratory that we have been able to carry out certain investigations which could not be done last year, and in fact some experiments we performed had never been tried previously. These were:—

- i. Anaerobic cultivation of blood taken direct from the circulation, as well as aerobic.
- ii. Anaerobic cultivation of the cerebro-spinal fluid.
- iii. Animal experiments (in addition to those carried out last year when Dr. Seidelin was here).

Briefly, the results of all these may be summed up in the word "negative," but this does not mean that no inferences can be drawn from them.

1. I had always been hoping for an opportunity of obtaining a good blood culture at the point of death, for if the condition be due to bacteriæmia it is probable that the organism would be best obtained then; I therefore kept materials ready for an emergency call, and an excellent opportunity arose in the case of J. E. B. This was a typical case in practically every respect; the age, the history, the length of disease, the period of intermission, the more fulminating termination, all were typical. The pathological findings at the autopsy were those generally found, and there were no worms present to complicate matters.

All the blood cultures, aerobic and anaerobic, remained sterile; I made eight of these and incubated four in each way.

There will probably be no further opportunity of confirming these findings, or rather absence of findings, this year but there may be next. However, every care was taken to make the examination complete in the above case, and, by putting up several cultures, to check my own results, so that if these be taken as correct, the *natural inference is that the condition is not a septicæmia*.

2. In this case also the spinal fluid showed no organisms either in smears, or culture in broth, on nasagar, or on blood agar. This tends to show that (apart from true meningitis cases, such as the "Peart series," reported last year) the cocci found in some of the cases are either accidental concomitants or else merely part causes, and only in a few of the cases.

The fact of their variability tends to support this view; variability, that is, as regards form—sometimes in groups, occasionally in chains—as regards staining reactions—sometimes decolorised much more readily by Gram's method than at others—and as regards sugar reactions—galactose is sometimes unaltered, mannite is less often rendered acid and in the latter the reaction is usually delayed, and in one case quoted above, raffinose was altered at the end of five days. This coincides largely with Dr. Seidelin's view of these organisms.

3. Animal feeding with gastric contents in two cases produced no results; intraperitoneal inoculation killed rapidly, but with signs of general peritonitis, not those of vomiting sickness.

Our work on vomiting sickness this year, in spite of the paucity of cases, has not, I venture to think, been barren of results; and, following up my summary in the 1913 report, I would add:—

1. That the weight of evidence is against the disease being due to a bacteriæmia.
2. That the rapidity of progress of symptoms with early fatal termination (or, in rarer instances, rapid and complete recovery) rather indicates the action of a poison.
3. That, in view of the early symptoms being gastric, and the cerebral succeeding soon after, this poison is produced in, or introduced into, and absorbed from, the stomach; (the gastric and duodenal congestion present tends to support this).
4. That, since feeding experiments have proved negative, and chemical tests (which in former years have been repeatedly tried by the island chemist) have revealed none of the usual poisons, and no signs of alkaloids, the poison (if such it be) is one which rapidly leaves the stomach or is rapidly decomposed, for example, it may be of the nature of a glucoside.
5. That it rapidly spreads over the whole body, as is evidenced by the hæmorrhages and other changes present in almost every organ and tissue.

6. That it produces its effects (apart from the clinical symptoms arising from cerebral causes) in the main upon the liver, as shown by the extensive fatty changes set up in that organ.

7. That, seeing the enormous mortality (90% of the cases reported to me this year), the first indication for treatment which can be deduced from the above theory—for it is little more than theory—and conjecture, though based on observed facts—until the poison be isolated and its antidote found, is to wash out the stomach at the very earliest opportunity.

The only suggestion I can offer as to the source of this hypothetical poison is that, since one can never obtain any history to implicate any particular article of food, it is due to something which is apparently dangerous only at certain times of the year, some fruit, perhaps, or vegetable, or what, in my opinion, is more probable, some growth (fungus, yeast, mould, etc.) on or in this food, rendering it toxic.

The disease rarely attacks adults, as it would if it were due to ordinary food poisoning; it almost never attacks the infant in arms, but mainly those at the toddling age (75% this year); amongst the poorer natives the children get the minimum of attention, and there is every opportunity for them to pick up unripe, or otherwise unsuitable food, from the ground and eat it, without their parents even being aware that they have done so.

Appended hereto are the following Tables:—

- I. Specimens examined for Enteric Fever month by month.
- II. Districts from which such specimens have been sent.
- III. Record of Helminthiasis specimens by districts.
- IV. Percentage record for the first six months of the year.
- V. Percentage record for the whole year in certain districts.
- VI. Specimens sent up month by month for the year.

I have the honour to be,

Sir,

Your obedient servant,

H. HAROLD SCOTT, M.D., London, D.P.H.

Government Pathologist.

TABLE I—Showing results of examinations by Widal's Reaction, month by month.

Month.	Typhosus.	Para-typhosus.	Negative.	Doubtful.	Double.	Total.
April	34	8	12	9	6	69
May	35	12	26	5	7	85
June	39	18	40	7	2	106
July	23	18	24	7	13	85
August	35	21	44	9	6	115
September	37	17	36	10	2	102
October	19	32	51	12	10	124
November	17	14	37	6	8	82
December	17	6	37	..	2	62
January	21	10	22	6	4	63
February	11	21	21	4	6	63
March	28	14	32	9	6	89
Totals	316	191	382	84	72	1,045

TABLE II—Districts from which specimens have been sent up for examination by Widal's test, and the results.

District.	Typhosus.	Para-typhosus.	Negative.	Doubtful.	Double.	Total.
Alexandria ..	4	..	..	..	..	4
Annotto Bay ..	24	9	20	3	8	64
Bethel Town ..	5	..	2	1	1	9
Black River ..	..	1	1	..	..	2
Browns Town ..	..	..	..	..	1	1
Buff Bay ..	8	6	3	7	1	25
Chapelton ..	2	2	5	1	2	12
Christiana ..	1	1	..	..	..	2
Clarks Town ..	..	..	1	..	..	1
Falmouth ..	1	1	..	..	..	2
Gayle ..	2	..	4	..	1	7
Grange Hill ..	3	1	..	..	..	4
Hospital and Kingston	124	52	148	27	18	369
Linstead ..	11	4	7	1	2	25
Lionel Town ..	4	1	4	..	..	9
Malvern ..	1	1	..	..	..	2
Manchioneal ..	2	1	1	..	..	4
Mandeville ..	14	8	12	2	7	43
May Pen ..	..	2	..	..	..	2
Montego Bay ..	26	26	33	6	7	98
Morant Bay ..	2	2	5	2	1	12
New Port ..	3	1	3	..	..	7
Plantain Garden River	10	13	23	4	2	52
Port Antonio ..	15	18	36	11	5	85
Port Maria ..	11	9	12	3	3	38
Richmond ..	2	3	6	4	1	16
Sav.-la-Mar ..	..	..	1	..	..	1
St. Andrew ..	6	11	18	6	4	45
St. Ann's Bay ..	11	7	17	2	2	39
Spanish Town ..	21	11	16	6	5	59
Others ..	1	..	4	..	1	6
Totals ..	314	191	382	86	72	1,045

TABLE III—Record of Helminthiasis specimens by Districts.

District.	No. sent..	Neg.	Anky. alone..	Ax. alone..	Tri. alone.	All three.	Ank. and As.	Anky. and Tri.	Ax. and Tri.
Alexandria ..	35	5	6	1	4	12	2	4	1
Annotto Bay ..	43	5	22	..	2	9	..	4	1
Black River ..	116	28	29	11	5	12	12	12	7
Buff Bay ..	325	22	161	7	6	55	23	42	9
Chapelton ..	132	17	24	6	10	34	11	23	7
Falmouth ..	110	6	12	4	13	33	8	22	12
Kingston and Hospital	129	29	45	3	9	16	5	18	4
Linstead ..	140	11	20	4	6	41	19	27	12
Lionel Town. ..	473	143	120	36	62	33	26	34	19
Lucea ..	38	1	23	..	..	2	8	3	1
Mandeville ..	67	7	8	8	3	20	9	9	3
May Pen Poor House	34	3	10	2	1	10	3	5	..
Montego Bay ..	163	34	53	9	10	28	4	18	7
Plantain Garden River	214	21	53	20	18	36	18	46	2
Port Maria ..	170	7	100	2	1	23	18	19	..
Sav.-la-Mar Poor. House	3	1	..	..	..	1	..	1	..
Spanish Town ..	208	20	73	6	15	40	18	33	3
St. Ann's Bay ..	105	9	12	2	10	32	13	17	10
St. Mary's Poor House	55	6	16	..	3	9	8	13	..
Others ..	6	..	..	..	..	2	1	2	1
Totals ..	2,566	375	787	121	178	448	206	352	99
Percentage on positive results ..	No. positive 2,191	..	35.92	5.52	8.12	20.44	9.40	16.06	4.51

TABLE IV—Percentage of Helminth infection in general and of Ankylostomiasis in particular, in districts from which over 100 specimens had been sent. April to September, 1913.

District.	Helminthiasis.	Ankylostome alone.	Ankyl. alone and in combination.
Buff Bay ..	94.51	36.77	91.61
Lionel Town ..	87.14	36.06	66.39
Plantain Garden River	95.34	21.95	76.21
Spanish Town ..	90.35	41.01	88.76
Spanish Town Hospital	92.72	37.25	91.17
Spanish Town Prison	87.35	46.05	88.15
Whole Island.	90.27	36.22	84.27

TABLE V—Similar to Table IV, but percentage estimated for whole year.

District.		Helminthiasis.	Ankylostome alone..	Ankyl. alone and in combination.
Black River	..	75.86	32.95	73.86
Buff Bay	..	93.23	53.13	92.73
Chapelton	..	87.12	20.87	80.00
Falmouth	..	94.54	11.53	72.11
Kingston (and hospital)		77.52	45.00	84.00
Linstead	..	92.14	15.50	82.94
Lionel Town	..	69.76	36.36	64.54
Montego Bay	..	79.14	41.08	79.84
Plantain Garden River		90.18	27.46	79.27
Port Maria	..	95.88	61.35	98.16
Spanish Town	..	90.38	38.83	87.23
St. Ann's Bay	..	91.42	12.50	77.08
Whole Island.	..	85.38	35.92	81.83

TABLE VI—Record of specimens examined month by month at the Laboratory.

Subject.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Total.
Widal Examination	69	85	106	85	115	102	124	82	62	63	63	89	1,045
Smears for Malaria, etc.	91	89	89	81	84	91	34	37	43	84	69	98	890
Fæces for Helminthiasis	63	186	365	250	156	227	261	226	253	200	190	189	2,566
Fæces for Dysentery, etc.	20	30	42	16	54	42	12	14	17	16	19	13	295
Urines	18	17	16	10	17	32	9	10	11	31	31	31	233
Pus specimens	10	15	12	19	31	30	14	10	16	21	14	22	214
Sputum	22	12	20	21	28	26	14	17	24	15	36	36	271
Tissues	41	44	3	17	11	28	3	4	6	26	74	136	393
Waters	10	11	19	8	29	11	14	15	3	19	10	7	156
Miscellaneous, (Vaccines, effusions, etc.)	47	36	22	30	35	88	32	28	43	67	85	121	634
Totals	391	525	694	537	560	677	517	443	478	542	591	742	6,697

PUBLIC HOSPITAL.

Report for the year ended 31st March, 1914.

Public Hospital, Kingston, June 15th, 1914.

Sir,

I have the honour to place before you the Annual Report of the Medical and Surgical cases treated in this Institution during the year ending March 31st, 1914.

TABLE I

Shows the number of patients treated in Hospital during the year under review, with results. The total number being 2,919, of this number 219 remained in Hospital at the close of the year. There were 317 deaths for the year.

The daily average number of beds occupied was 216. The number of applicants who applied for admission to the hospital, but who were rejected for want of accommodation or for other reasons was 5,228, as compared with 5,357 in the previous year.

All the rejected cases were treated and if considered necessary were admitted subsequently to hospital, or were referred to the Inspector of Poor.

TABLE II

Gives the average stay in days of patients in hospital,

TABLE III

Gives the number of deaths occurring within 12, 24, 48 and 72 hours after admission. These cases were admitted in a desperately ill condition, most of them were brought by their relatives or friends in order to save funeral expenses. The total number of deaths under this heading was 139. The total death rate for the year was 11.2%.

TABLE IV

Gives the number of medical cases treated during the year with results, the most noteworthy were :—

(a) *Malarial Fever*.—The number of cases treated in Hospital was 145 with 5 deaths as compared with 175 cases treated in the previous year with 4 deaths

(b) *Tubercle*.—Under this heading there were 57 cases with a total of 23 deaths 5 cases remained in hospital at the end of the year. During the previous year 84 cases were treated of this number 24 died in hospital.

(c) *Enteric Fever*.—During the year under review 149 cases were treated with a mortality of 55 as compared with 179 cases treated in the previous year with 63 deaths.

(d) *Venereal Diseases*. The subjoined table shows the number of cases treated during the year :—

Syphilis.	Cases.	Deaths.
Primary	none	none
Secondary	none	none
Tertiary	32	2
Congenital	7	2
Gonorrhoea and Sequela	155	6
Chancroids	41	

(e) *Colitis*.—During the year under review there were 91 cases of Colitis treated, 20 of these cases proved fatal, during the previous year 225 cases were treated, of this number 52 cases proved fatal.

(f) *Dysentery*.—There were 33 cases treated during the year with 5 deaths as compared with 13 cases and 1 fatal case during the previous year.

Generally speaking there has been a marked diminution in the number of bowel complaints treated during the year under review as compared with the previous year

TABLES VI, VII, VIII

Give returns of countries and parishes and occupations of patients admitted to hospital during the year under review.

TABLE IX

Shows the number of prescriptions dispensed for the outpatients, the Constabulary and Maternity Hospital.

The number of casualties treated during the year was 7,719. The number of outpatients dressings done in the outpatients department was 26,227.

The Matron has regularly held classes for the senior and junior nurses and the results have been fairly satisfactory.

The thanks of the hospital are due to many kind friends who have sent magazines and illustrated papers to the patients.

During the year under review the following books have been added to the Library :

Papers on Pellagra—present by Captain Siler.

Pulmonary Phthisis, Hyslop Thomson.

Preventive Medicine and Hygiene, Rosenau.

Prevention of Infectious disease, Doty.

Hookworm disease, Dock and Bass.

The report of the Local Government Board, Supplement for 1912-13.

The following Journals have been received :—

"The Lancet." Journal of Tropical Medicine, The Journal of the R. A. M. C. The Practitioner: Tropical Diseases Bulletin and Journal of Vaccine Therapy.

Dr. Thomson has been good enough to present his copies of the B. M. J. to the Hospital Library.

The Lancet, The Journal of Tropical Medicine, the B.M.J. and Bulletins of Tropical Diseases for 1913 might be bound.

The thanks of the Hospital are due to Dr. Thomson for his gifts of the B. M. J. to the Institution and for the interest he evinces in the Hospital Library.

I have, etc.,
(Sgd.)

C. W. M. CASTLE, S.M.O.

The Hon.

The Supt. Medical Officer,
Kingston.

Public Hospital, Kingston,
11th April, 1914.

The Honourable The Superintending Medical Officer,
Sir,

I have the honour to submit the following report on the working of the Dental Laboratory of this Hospital under my charge for the financial year ending 31st March last.

In pursuance of the terms of my appointment, I attended 52 whole days during the year and dealt with 1,276 cases thus averaging 24.53 patients per day; whilst a few of these were interns of the Hospital, the majority was made up of casual members of the public who attended at the Laboratory on the days of my visit.

Extractions—1,504 extractions were performed during the year, in two cases of which chloroform had to be administered.

Treatments—Treatment of early decay in teeth numbered 185. In connection with this class of work a regrettable apathy is displayed by most of the subjects. Many a molar which could have been made servicable for several years to come and so probably assist in reducing the number of cases of Dyspepsia from insufficient mastication, has had to be sacrificed in consequence of the utter disregard of my advice on the part of their owners to return for weekly treatment. Any temporary relief seems to suffice and when after several weeks another acute attack of the ache forces a second visit the condition by then has become such that there is no alternative but the use of the forceps.

Pyorrhæa Alveolaris—Under this heading 16 cases were treated. This bug bear of the Dental Surgeon is just as prevalent in Jamaica as it is in most of other countries. A serious attempt is now being made by research workers in Dental Surgery to establish its exact pathology and it is to be hoped that it will not be long before an antidote is found for this deadly poison of the human gums.

Fillings.—Fillings numbered 24. These consisted of either Amalgam, Cement or Guttapercha.

Cleanings.—Three complete sets of teeth were cleaned.

Necrosis—There were 8 cases of removal of necrosed alveolar process and 3 cases of opening dental abscesses.

With a view to avoiding any abuse or improper advantage being taken of this system of relief that has been provided by the Hospital, I have endeavoured as far as it has been possible to confine its benefits to that class of the public, whom I conceive the Government had in mind at the time this service was instituted. Frequently applicants with that perhaps pardonable desire to obtain "something for nothing" have presented themselves but who from external appearances supply ample proof of being able to afford payment for their own relief. These cases I invariably refer to some private practitioner in the city other than myself.

Under the new arrangement recently approved of by His Excellency the Governor by which I shall attend at the Laboratory two half days in each week instead of one whole day, I anticipate a considerable increase in the figures under all heads which will be included in my next year's report.

I have the honour to be,

Sir,

Your obedient Servant,

S. C. DEPASS,

Surgeon Dentist to the Public Hospital, Kingston.

TABLE I.

	Males.	Females.	Total.
Patients remaining in hospital 1st April, 1913	121	98	219
Patients admitted during the year 1913-1914	1,482	1,218	2,700
Total patients treated	1,603	1,316	2,919
Of those were cured	1,076	845	1,921
Of those were relieved	160	138	298
Of those were not relieved	72	92	164
Of those died	138	179	317
Remaining in hospital March 31, 1914	122	97	219
	1,567	1,352	2,919

Death rate 11.2%

TABLE II.

Daily average number of beds occupied by male patients ...	...	119.55
Daily average number of beds occupied by female patients ...	...	97.5
Average stay in days of those who died—males ...	...	12.29
Average stay in days of those who died—females ...	...	11.9
Average stay in days of males discharged ...	...	27.76
Average stay in days of females discharged ...	...	24.64
Average stay in days of males remaining at the end of the year ...	...	29.16
Average stay in days of females remaining at the end of the year ...	...	31.35
Longest stay of any one patient in hospital ...	...	395

TABLE III.

Patients who have died within the following hours after admission:—

		Hours—				Total.
		12.	24.	48.	72.	
Males	...	27	24	20	18	89
Females	...	12	10	13	15	50
		39	34	33	33	139

TABLE IV.

Public Hospital, Kingston—Model

DISEASE.	April.		May.		June.		July.		August.		September.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Enteric Fever	19	8	11	19	21	4	14	6	9	3	10	8
Dysentery	8	1	6	1	7	1	1	...	...	...	1	1
Influenza	...	...	...	...	...	...	...	...	...	...	...	...
Pneumonia	4	2	1	...	2	...	3	2	3	2	1	...
Malarial Fever—												
(a) Tertian	5	...	7	...	7	1	6	...	3	...	1	...
(b) Subtertian	5	...	7	...	8	...	6	...	5	...	5	...
Tetanus	1	1	...	...	1	1	...	...	1	1	1	1
Pellagra	2	1	...	...	1	...	1	1	...	...	...	...
Erysipelas	...	...	...	...	...	...	1	...	...	...	...	...
Septicaemia	2	1	1	1	...	...	...	...	...	...	...	...
Tuberculosis Pulmonary	3	2	2	1	5	2	6	3	5	4	5	3
Syphilis—												
(a) Primary	...	...	...	...	...	...	...	...	...	...	...	...
(b) Secondary	...	...	...	...	...	...	...	...	...	...	...	...
(c) Tertiary	3	1	6	1	3	...	1	...	6	...	...	...
(d) Congenital	...	...	2	...	...	...	...	...	...	...	...	...
Gonorrhœa and Sequela	8	...	13	...	19	2	13	...	16	...	14	1
Chancroids	4	...	6	...	5	...	2	...	8	...	5	...
Alcoholism	...	...	1	...	...	...	...	...	...	...	...	...
Rheumatism	4	...	2	...	2	...	3	...	2	...	...	...
New Growth—												
(a) Malignant	7	1	5	2	5	1	9	...	5	...	6	1
Non-malignant	...	...	1	...	6	...	4	1	3	...	2	...
Anæmia	1	1	2	...	4	...	...	...	3	...	5	...
Debility	1	...	...	...	1	...	2	...	1	...	1	...
Appendicitis	1	1	...	...	2	1	...	...	2	...	1	...
Scarlet Fever	...	...	...	...	...	...	...	...	...	...	...	...
Beri-Beri	...	...	...	...	...	...	...	...	1	...	...	...
Measles	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	...	...	...	...	...	...	...	...	...	...	...	...
Mumps	...	...	...	...	...	...	...	...	1	...	...	...
	77	20	79	17	99	13	73	13	74	10	56	15
LOCAL DISEASES—												
Nervous System—												
Brain	6	2	1	...	1	...	...	...	...	...	...	...
Nerves	13	...	19	3	4	...	5	...	2	...	4	1
Spinal Cord	...	...	...	...	...	...	...	...	...	...	...	...
Epilepsy	1	...	1	1	...	...	3	1	...	...	...	...
Neuralgia	...	...	1	...	...	...	1	...	...	...	1	...
Paralysis	1	...	3	...	4	1	2	...	2	1	2	1
Hysteria	...	...	1	...	...	...	...	...	...	...	...	...
MENTAL DISEASES—												
Mania	...	...	...	...	...	...	...	...	...	...	...	...
Dementia	1	...	...	...	...	...	1	...	...	...	1	...
Melancholia	...	...	...	...	...	...	...	...	...	...	...	...
DISEASE OF—												
Eye	4	...	5	...	5	...	6	...	10	...	8	...
Ear	...	...	...	...	...	...	...	...	1	...	...	...
Nose	...	...	...	...	1	...	...	...	...	...	...	...
Circulatory system	3	1	6	4	6	3	4	1	5	2	9	4
Respiratory system	10	3	10	1	19	3	7	...	9	...	10	2
Digestive system	46	8	32	4	29	5	38	5	37	6	21	4
Lymphatic system	11	...	10	...	5	...	6	...	8	...	5	...
Urinary system	4	1	10	3	6	3	4	1	7	1	4	2
Generative Organs—												
Male	9	...	2	...	10	2	1	...	1	...	5	...
Female	10	1	7	...	10	1	18	...	15	...	16	...
Cellular tissue	10	...	16	1	9	1	16	...	12	1	6	1
Skin	10	...	8	...	6	...	8	...	9	...	7	...
Bones and Joints	11	...	2	...	4	...	9	3	3	...	6	...
	150	16	134	18	119	19	129	11	121	11	91	15
Local Injuries	18	...	17	...	18	2	19	...	16	...	15	...
Malformation	...	...	...	...	...	...	1	...	1	...	...	...
Poisons	...	...	...	...	...	...	...	...	...	...	...	...
Parasites	1	...	...	...	1	...	4	...	...	...	4	...
No disease	5	...	5	...	...	...	2	...	3	...	2	...
	24	...	22	...	19	2	26	...	20	...	21	...

TABLE IV.

Report—Nosological Return, 1913-14.

October.		November.		December.		January.		February.		March.		Total.		Remaining over on 31st March, 1914.
Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
9	1	15	2	9	5	14	2	8	2	4	3	149	55	21
...	...	1	...	5	1	2	...	2	...	...	...	33	5	...
...	...	...	...	...	...	2	...	...	...	...	...	2	...	2
3	2	3	2	7	1	5	2	5	...	6	3	44	16	7
...	...	1	...	5	...	1	...	2	...	1	...	39	1	2
10	...	16	...	15	1	16	1	8	...	5	1	106	3	6
1	...	...	...	...	...	2	2	...	...	...	...	7	6	1
3	2	...	...	...	...	...	...	...	...	...	...	7	4	...
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
...	...	...	...	...	...	...	...	2	...	...	...	5	2	...
5	1	6	2	7	3	4	1	7	...	2	1	57	23	5
...
...
2	...	3	...	4	1	2	...	2	...	...	...	32	2	4
...	...	1	1	4	1	...	...	...	...	...	...	7	2	2
16	2	15	...	17	...	11	...	10	...	4	...	155	6	9
2	...	2	...	3	...	3	...	1	...	...	...	41	...	4
...	...	1	...	1	...	...	...	...	...	1	...	4	...	...
6	...	4	1	5	...	4	...	10	...	...	...	43	1	5
6	1	8	1	6	...	2	1	5	...	1	...	65	8	7
2	...	3	1	2	...	4	...	2	...	1	...	30	2	1
1	...	3	1	3	...	1	...	1	...	2	...	24	2	...
1	...	1	1	...	...	2	...	...	...	...	...	10	1	...
6	...	1	...	2	...	2	...	1	...	...	...	18	2	3
...	...	...	...	...	...	1	...	...	...	...	...	1	...	...
...	...	7	...	...	...	3	1	...	...	2	1	13	2	...
...	...	2	...	...	...	...	...	...	...	...	...	2	...	...
1	...	...	...	...	...	...	...	...	...	...	...	2	...	1
74	9	93	12	95	13	81	10	66	2	29	9	897	143	80
...	...	...	...	...	...	3	1	2	...	2	1	15	4	...
3	1	1	1	...	...	2	...	...	...	...	...	53	6	3
3	...	...	...	...	...	...	...	...	...	...	...	3	...	3
1	...	...	...	1	...	2	...	...	...	...	...	9	2	1
...	...	1	...	...	...	1	...	1	...	...	...	6	...	1
3	1	...	...	4	3	1	...	...	...	...	...	22	8	1
...	...	...	...	1	...	...	...	...	...	...	...	2	...	...
...
...	...	1	...	...	...	...	...	...	...	...	...	4	...	...
...
6	...	3	...	4	...	4	...	4	...	...	...	59	...	19
1	...	...	...	2	...	1	...	...	...	2	...	5	...	2
...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
6	5	8	3	7	2	10	4	1	...	6	...	71	29	3
4	1	9	...	5	...	12	1	10	...	8	...	112	11	3
19	3	29	3	57	7	23	8	33	6	23	5	587	64	18
3	...	3	...	6	...	4	...	5	...	...	...	66	...	4
6	4	10	4	6	2	6	1	1	...	3	...	67	22	9
7	...	1	...	1	...	6	...	1	...	3	...	47	2	2
8	...	10	1	16	1	6	...	18	...	2	...	136	4	6
6	...	7	1	8	1	8	...	13	4	6	1	117	11	16
7	...	9	...	10	...	6	...	8	...	1	...	89	...	14
8	...	10	...	9	...	6	...	8	...	...	...	76	3	7
91	15	102	13	137	16	101	15	105	10	56	7	1,340	166	112
20	...	20	...	20	1	12	1	10	...	12	2	197	6	24
...	...	...	...	...	...	...	...	1	...	...	...	3	...	...
...	...	...	...	...	...	...	...	1	1	1	1	2	2	...
...	...	1	...	...	...	2	...	...	...	...	...	13	...	...
2	...	1	...	2	...	2	...	3	...	2	...	29	...	3
22	...	22	...	22	1	16	1	15	1	15	3	244	8	29

TABLE V.

1913-1914.

September.		October.		November.		December.		January.		February.		March.		Total.	
Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
3	..	5	..	4	I	3	..	2	..	5	..	4	..	59	I
..	2	..
..	..	3	..	..	..	..	..	5	..	..	..	4	..	15	..
4	..	I	..	..	..	..	..	..	..	3	..	2	..	14	2
..	I	I	2	..	I	..	..	..	..	..	5	I
2	..	I	..	I	..	..	..	I	..	..	..	..	..	7	..
I	I	..	..	..	..	..	..	..	..	..	2	..
..	I	..	..	..	..	..	..	..	2	..	3	..
..	I	..	I	..	..	..	..	..	2	..
I	I	..	I	..	..	..	I	..	..	..	8	I
..	I	..	I	..	3	..	..	..	..	..	6	..
2	..	3	..	2	..	..	..	I	..	..	..	..	..	11	..
..	I	..	..	..	..	..	3	..
..	I	..	..	..	..	..	2	..
2	..	4	..	2	..	3	..	2	..	5	..	6	..	39	..
I	..	3	I	..	..	I	..	I	..	..	..	I	I	8	2
I	..	2	..	I	..	..	..	2	..	I	..	I	I	13	2
..	I	..
5	..	4	..	5	..	2	..	6	..	4	..	5	..	55	..
..	5	..
..	..	5	..	I	..	2	..	5	..	2	..	3	..	25	..
..	I	..	I	..	2	..	..	..	5	..
..	I	..	I	..	2	..	..	..	5	..
2	I	I	..	I	..	2	..	I	..	..	..	..	..	15	I
..	I	..
..	2	..	..	..	I	..	..	..	2	..	9	..
I	I	..	..	..	..	..	3	..
7	..	8	..	5	..	5	..	5	..	4	..	2	..	59	..
..	I	..	..	..	..	..	..	..	I	..	3	..
..	I	..	..	..	..	..	..	..	..	..	I	..
..	..	I	..	..	..	..	..	..	..	..	..	..	..	2	..
7	..	6	..	3	..	4	..	7	..	2	..	2	..	50	..
I	3	..
..	I	..	..	..	I	..
..	I	..	I	..	I	..	2	..	2	..	7	..
6	..	I	..	..	..	..	..	..	..	..	..	4	..	11	..
I	2	..	3	..
3	5	..	..	..	2	..	..	..	2	..	23	..
2	2	..
..	I	..	..	..	..	..	..	..	3	..
..	2	..	..	..	I	..	..	..	4	..	14	..
..	I	..	..	..	..	..	..	..	3	..
..	4	..	I	..	..	..	3	..	7	..	24	..
..	I	..
2	..	I	..	I	..	I	..	I	..	I	..	2	..	30	..
..	366	..
..	929	10

Death 1.07 %

TABLE VI.—COUNTRIES.

Africa	2	Gibraltar	1	Russia	1
America	9	Hayti	2	Scotland	1
Barbados	4	Honduras	1	Spain	2
British Guiana	1	Hungary	1	St. Lucia	1
China	22	Inagua	1	St. Vincent	1
Colombia	5	India	41	St. Thomas	1
Cuba	2	Ireland	1	Syria	2
Demerara	3	Jamaica	2,555	Sweden	2
Denmark	2	Nassau	1	Turks Island	2
England	16	Nicaragua	1	Tortola	1
Finland	1	Norway	3		
Grand Cayman	3	Nova Scotia	1	Total	2,700
Germany	6	Portugal	1		

TABLE VII.—PARISHES.

Kingston	1,806	St. Mary	20	Clarendon	10
St. Andrew	720	Trelawny	2	St. Catherine	35
Port Royal	7	Hanover	1	Foreign	46
St. Thomas	20	Westmoreland	5		
Portland	11	St. Elizabeth	8	Total	2,700
St. Ann	1	Manchester	8		

TABLE VIII.—OCCUPATIONS.

Accountants	1	Fishermen	23	Renovators	1
Apprentices	8	Fitters	5	Reporters	3
Bakers	30	Foremen	1	Sailmakers	1
Barbers	3	Gardeners	28	Sanitary Inspectors	1
Blacksmiths	8	Goldsmiths	1	Sawyers	1
Boatmen	1	Grooms	12	Seamen	41
Boilermakers	1	Hatmakers	11	Seamstresses	161
Bookbinders	1	Headmen	2	Schoolmasters	6
Bookkeepers	1	Higgiers	83	Servants	241
Brakesmen	1	Housecleaners	2	Shoemakers	17
Bricklayers	16	Jewellers	1	Shopkeepers	23
Builders	1	Jockeys	2	Shopservers	15
Busmen	10	Labourers	409	Shipwrights	2
Butchers	4	Laundresses	220	Ships Chandlers	1
Butlers	21	Machinists	2	Stenographers	1
Cakesellers	1	Masons	5	Stewards	3
Carpenters	49	Mechanics	2	Stevedores	4
Cartmen	28	Medical Practitioners	3	Storemen	14
Chaffeurs	3	Merchants	1	Tailors	24
Cigarmakers	11	Messengers	6	Tanners	1
Clerks	25	Midwives	1	Tinsmiths	1
Coachbuilders	2	Moulders	1	Travelling Agents	1
Coachmen	21	Musicians	3	Trimmers	3
Compositors	1	None	594	Tobacconists	1
Cooks	40	Nurses	39	Upholsterers	1
Coopers	5	Operators	2	Vendors (News)	7
Conductors	8	Painters	11	Violinist	1
Constables, (Police)	181	Peddlers	13	Watchmen	1
Do. (Rural)	5	Photographers	1		
Draymen	11	Planters	95		
Druggists	2	Porters	4		
Electricians	3	Plumbers	4		
Enginedrivers	1	Postmen	2		
Engineers	6	Potters	3		
Firemen	20	Produce Dealers	1		
				Total	2,700

1913-14.

TABLE IX.

No. of Patients treated under tickets from Inspector of Poor	...	580
" " Attendances of the above	...	4,190
" " Prescriptions made up for the above	...	7,191
" " Casualties treated without tickets	...	7,719
" " Prescriptions for the above	...	8,400
" " Minor Operations performed in Surgery	...	67
" " Prescriptions made up for Constabulary	...	1,392
" " Out-patient's dressings applied	...	26,227

Financial Return of the Public Hospital for the five years ended 31st March, 1910, 1911, 1912, 1913, 1914.

Year.	Average daily number of Bed.	Gross Expenditure.	Receipts.	Net expenditure after deducting receipts.	Number of patients admitted.	Average annual cost per bed calculated on the gross expenditure.	Average daily cost per bed calculated on the gross expenditure.	Average annual cost per bed calculated on the net expenditure.	Average daily cost per bed calculated on the net expenditure.	Cost of maintenance alone per bed per diem.
		£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.
1909-10 ...	189	8,094 8 6	344 5 7	7,750 2 11	3,498	42 16 6	0 2 7 ¹ / ₄	41 0 1 ¹ / ₄	0 2 2 ³ / ₄	0 10 ¹ / ₂
1910-11 ...	193	9,016 14 10	337 9 11	8,679 4 1	3,172	46 14 4 ¹ / ₂	0 2 6 ¹ / ₂	44 19 4 ³ / ₄	0 2 5 ¹ / ₂	0 10 ¹ / ₂
1911-12 ...	217	9,796 2 3	487 5 3	9,308 17 0	3,132	44 6 0	0 2 5	42 1 0	0 2 2 ¹ / ₄	0 10 ¹ / ₄
1912-13 ...	223	10,540 4 6	702 16 1	9,837 8 5	3,199	46 4 3 ¹ / ₂	0 2 6 ¹ / ₄	43 1 3 ¹ / ₄	0 2 4 ¹ / ₄	0 10 ¹ / ₄
1913-14 ...	217	*10,692 2 2	741 17 7	9,850 4 7	2,700	48 6 1 ¹ / ₂	0 2 7 ³ / ₄	44 8 6 ¹ / ₄	0 2 5	0 10 ³ / ₄

Total cost of Maintenance	...	£3,714	14	0
Less for feeding of 16 nurses (10 at 5s. and 6 at 3s. per week in nursing home)	...	176	16	0
		3,537	18	0

* This amount includes £209 14 10 for Hospital probationers.

VICTORIA JUBILEE LYING-IN HOSPITAL.

Report for the year ended 31st March, 1914.

Kingston, March 31st, 1914.

Sir,

I have the honour to submit the report of the Victoria Jubilee Lying-in Hospital for the year ended March 31st, 1914.

The number of patients admitted during the year was 634, against 653 of the previous year. 417 of the patients were black, 209 coloured, 3 coolies, 3 white. 214 were married.

There were eight deaths during the year, seven from Puerperal convulsions, one from Septicæmia.

All patients on admission were tested for Albuminuria (Brights' Disease): a positive result was obtained in no less than 64 cases, about ten per cent.

529 patients resided in Kingston, 91 St. Andrew, 14 in more remote parishes.

The number of infants born was 584, of these 288 were males, 296 females. There were 13 cases of twins. 46 of the infants were still born. 33 of the infants died.

Ten pupil nurses were admitted for training, all these passed the examination and had certificates given them. Three of these have since been taken on as Charge Nurses. An old nurse returned to complete her training.

The following most acceptable gifts were received:—

Dr. Henderson, magazine: Mrs. Ker, £1 towards the Nurses' Christmas Dinner. Gifts of infants clothing would be most useful.

I have &c.,

(Sgd.)

M. GRABHAM,

Visiting Medical Officer, Victoria Jubilee Hospital.

SYNOPSIS OF CASES.

Presentations—

Vertex	..	..	562	Breech	..	..	4
Unreduced Occipito—posterior	..	..	5	Brow	..	..	1
Footling	..	..	9	Funis	..	..	3
				Transverse	..	..	5

Diseases and complications affecting the mother—

Abortion	..	..	6
Adherent placenta	..	..	6
Albuminuria	..	..	64
Bony growth in Pelvis	..	..	1
Bronchitis	..	..	1
Contracted Pelvis (uniformly)	..	..	1
Colitis	..	..	2
Eclampsia	..	..	20
Fibroids	..	..	2
Gonorrhoea	..	..	1
Haemorrhage, primary post partum	..	..	17
" secondary post partum	..	..	1
" ante partum	..	..	5
Inertia	..	..	8
Malaria	..	..	8
Mania (Puerpural)	..	..	1
Neuritis	..	..	1
Parotitis	..	..	1
Phthisis	..	..	1
Placenta prævia	..	..	3
Pumonary embolism	..	..	1
Pelvic abscess	..	..	1
Pleurisy	..	..	1
Rigid Os	..	..	5
Rheumatism	..	..	1
Syphilis	..	..	1

Diseases or Deformities affecting the foetal membranes of the infant—

Ascites	..	..	4
Born with teeth	..	..	3
Convulsions	..	..	4
Club feet	..	..	1
Cephalhaematoma (double)	..	..	1
Extra fingers	..	..	3
Extra toes	..	..	1
Haemorrhagic diathesis	..	..	2
Hydramnios	..	..	4
Hydrocephalus	..	..	1
Imperforate Anus	..	..	1
Knotted cord	..	..	1
Ophthalmia	..	..	19
Premature	..	..	10
Syphilis	..	..	1

Operations—

Version	..	..	14
Application of Forceps	..	..	13
Curetting	..	..	36
Craniotomy	..	..	1
For ruptured perinaeum	..	..	25

LUNATIC ASYLUM

Report for the year ended 31st March, 1914.

Sir,

I have the honour to submit the annual report of the Jamaica Lunatic Asylum for the year ended March, 31st 1914, with the usual financial and statistical tables.

2. The number of patients on the 31st March, 1913, was 1,314, whilst on the 31st March, 1914, there remained 1,341, or an increase of 27, which may be considered an improvement upon the previous 12 months when our population increased by 119.

3. The total number of patients under treatment was 1,634, including 2 infants born in the Institution, or an average number of 1,323 under treatment.

4. Including 2 infants there were 320 admissions, 164 of whom were males and 156 females.

Of the total number of admissions, 37 had been inmates of the Asylum on one or more previous occasions, whilst 283 (including 2 infants) were admitted for the first time.

5. Of the 163 patients discharged, 158 recovered; 1 discharged relieved, 1 not improved, 1 escaped, and 2 infants sent home with their mothers.

The rate of recovery calculated on the number of admissions was 49.82 per cent.

6. Of the 130 deaths, 77 were male and 53 were females, or a death-rate of 9.90 calculated on the average number under treatment.

A large percentage of the deaths was due to consumption of the lungs, a disease for many reasons prevalent in all Asylums for the insane. Asylum dysentery also claimed a few.

7. The Welcome Pellagra Commission consisting of Dr. L. W. Sambon, of the London School of Tropical Medicine, Captain J. F. Siler, Medical Corps, United States Army and Mr. Jennings, Entomologist to the Commission visited the Asylum, inspected the pellagrins and collected material for report.

8. The Ward and Court surrounded by a high wall erected for safe custody of dangerous and criminal lunatics was completed and occupied, but the erection of another ward for the accommodation of 200 male inmates was for certain reasons deferred. It will, I understand, be put in hand without delay. By the time it is completed a similar ward for accommodating 200 female inmates will be required, or the erection of another Asylum in one of the western parishes will have to be seriously considered.

9. Repairing of roads, weeding the grounds and destroying breeding places of mosquitoes have afforded healthy occupation for the male inmates, whilst of the female inmates, such as were capable and could be induced to work, were employed in the laundry, ironing and sewing rooms

10. Cricket is still the most attractive form of amusement with the inmates, and matches arranged with visiting clubs are keenly contested, and are a source of perennial pleasure, whilst our indoor entertainments were rendered enjoyable by the presence and assistance of musical friends.

11. On her tour in Jamaica, Her Highness Princess Marie Louise of Schleswig Holstein graciously visited the Institution and conversed with the inmates.

Mrs. Bourne visited the wards on Xmas-day and rendered the lives of the inmates happier by her kind words of hope and encouragement.

12. Again we gratefully acknowledge the receipt of illustrated papers and magazines from the following ladies and gentlemen:—

Mrs. Jordon Andrews, Mrs. Abrahams, Mrs. Levy, Miss Thompson, John McDonald, Esq., Archibald Munroe, Esq., R. S. Haughton, Esq., T. F. Clarke, Esq., and the Hon. Secretaries of the Jamaica Institute, Jamaica, St. Andrew and Liguanea clubs.

13. The Medical Superintendent was granted six months leave of absence. His duties were performed by Dr. T. F. Shackleton, the Senior Assistant Medical Officer, whilst Drs. Richardson, Russell and Bond acted the part of Junior Assistant Medical Officers.

14. The sum voted for the maintenance of the Asylum (including a special warrant for £890) was £20,203 0s. 6d.

The sum expended was £19,613 14s. 8½d., the rate per head per diem, being 9½d.

I have the honour to be,

Sir,

Your Obedient Servant,

D. J. WILLIAMS,
Medical Superintendent.
The Lunatic Asylum, Kingston.
25th June, 1914.

To the Hon. Suptg. Med. Officer,
Kingston.

TABLE I.—Shewing the actual admissions, re-admissions, discharges and deaths during the year ended 31st March, 1914.

	Males.	Females.	Total.	Males.	Females.	Total.
In Asylum 1st April, 1913 .. ..	...	...	...	634	680	1,314
Cases admitted—						
First admissions	142	139	281			
Not first admissions	20	17	37			
Captured .. ..	...	...	...
Birth	2	...	2			
Total cases admitted during the year ...	...	...	...	164	156	320
Total cases under care during the year ..	...	...	...	798	836	1,634
Cases discharged—						
Recovered	69	89	158			
Relieved	1	...	1			
Not improved	1	...	1			
Escaped	1	...	1			
Died	77	53	130			
Infant removed	2	...	2			
Infants died .. ..	...	...	...
Total discharged and died during the year ..	...	...	...	151	142	293
Remaining in Asylum 31st March, 1914 ..	...	...	...	647	694	1,341
Average number resident during the year ..	...	...	...	637	686	1,323
Persons under care during the year (<i>i.e.</i> , separate persons in contradistinction to cases which may include the same individual more than once) .. ..	...	...	...	791	830	1,621
Persons admitted including 2 infants born in Asylum ..	...	...	...	157	150	307
Persons recovered do do ..	...	...	...	71	89	160

TABLE Ia.—Shewing the number of previous attacks among those admitted during the year 1913-1914, distinguishing those attacks that have been treated to recovery and discharged.

Number of previous attacks.	Having had previous attacks.					
	All attacks.			Attacks followed by discharge or recovery.		
	Males.	Females.	Total.	Males.	Females.	Total.
Have had 1 previous attack ...	24	32	56	3	10	13
Have had 2 previous attacks ...	7	9	16	2	1	3
Have had 3 previous attacks ...	3	6	9	—	6	6
Have had 4 previous attacks ...	1	1	2	—	—	—
Have had more than 5 attacks ...	1	2	3	—	1	1
	36	50	86	5	18	23

TABLE II.—Shewing the admissions, re-admissions, discharges and deaths for the past seventeen years ended 31st March, 1914.

	Males.	Females.	Total.	Males.	Females.	Total.
Remaining on 31st March, 1897 ...	...	...	...	345	377	722
Admitted during the last seventeen years ...	1,775	1,725	3,500	...	...	...
Re-admissions ...	336	280	616	..	..	..
Total number of admissions ...	...	...	...	2,111	2,005	4,116
Total number under care ...	...	...	...	2,456	2,382	4,838
Discharged cases—						
Recovered ...	935	880	1,815			
Relieved ...	34	19	53			
Not improved ...	26	9	35			
Died ...	811	780	1,591			
Escaped and not captured ...	3	...	3			
Total discharged and died ...	...	...	...	1,809	1,688	3,497
Remaining 31st March, 1914 ...	...	...	...	647	694	1,341
Average yearly number resident ...	..	..	...	498	507	1,005

TABLE III.—Shewing the Admissions, Discharges and Deaths, with the mean Annual Mortality, and the proportion of recoveries per cent. of the Admissions for each of the last seventeen years.

Year.	Admitted.			Discharged.												Remained 31st March in each year			Average number Resident.			Percentage of Recoveries. on admission.			Percentage of Deaths. on average number Resident.		
				Recovered						Relieved.			Not Improved.															Died.
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.			
1897-98 ..	109	95	204	34	34	68	..	..	..	2	..	2	25	44	69	393	394	787	377	382	759	31.19	36.84	34.01	6.63	11.16	8.89
1898-99 ..	88	80	168	66	53	119	..	..	..	2	2	4	32	31	63	381	386	767	386	388	774	75.	66.25	70.62	8.29	7.98	8.13
1899-1900 ..	96	93	189	34	32	66	1	..	1	2	2	4	38	30	68	402	417	819	390	399	789	35.41	34.41	34.90	9.74	7.52	8.36
1900-01 ..	104	96	200	48	42	90	2	..	2	..	..	..	32	27	59	424	444	868	414	430	844	46.15	43.75	44.95	7.72	6.27	6.99
1901-02 ..	99	83	182	55	48	103	3	1	4	2	..	2	40	38	78	423	440	863	423	439	862	55.55	57.83	56.69	9.45	8.65	9.05
1902-03 ..	118	108	226	41	35	76	..	..	..	..	..	..	25	29	54	475	484	959	456	459	915	43.74	32.40	33.57	5.48	6.31	5.89
1903-04 ..	105	101	206	34	33	67	..	..	..	3	..	3	38	57	95	505	495	1,000	492	480	972	32.38	32.67	32.52	7.72	11.87	9.79
1904-05 ..	124	116	240	53	37	90	..	1	1	3	1	4	37	74	111	536	498	1,034	520	502	1,022	42.74	31.89	37.31	7.11	14.74	10.92
1905-06 ..	134	96	230	52	53	105	11	4	15	1	..	1	44	42	86	562	495	1,057	545	503	1,048	38.80	55.20	47.	8.07	8.34	8.20
1906-07 ..	109	125	234	83	68	151	8	5	13	..	..	..	76	45	121	504	502	1,066	543	505	1,048	76.14	54.40	55.27	13.99	8.91	11.45
1907-08 ..	148	131	279	58	61	119	3	3	6	..	1	1	72	55	127	519	513	1,032	520	513	1,033	39.18	46.56	42.87	13.84	10.72	12.28
1908-09 ..	114	123	237	51	34	85	4	2	6	1	2	3	81	39	120	496	559	1,055	515	535	1,050	44.73	27.64	36.18	15.72	7.28	11.50
1909-10 ..	139	123	262	46	51	97	1	1	2	2	1	3	60	73	133	525	556	1,081	510	571	1,081	33.09	41.46	37.27	11.76	12.78	12.27
1910-11 ..	164	160	324	71	72	143	1	..	1	1	..	1	49	42	91	567	602	1,169	546	591	1,137	43.29	45.	44.14	8.97	7.10	8.03
1911-12 ..	138	130	268	67	77	144	3	2	5	1	..	1	40	51	91	593	602	1,195	581	602	1,183	48.55	59.23	53.89	6.88	8.47	7.67
1912-13 ..	160	189	349	73	61	134	..	..	..	1	..	1	45	50	95	634	680	1,314	625	647	1,272	45.62	32.27	38.94	7.2	7.72	7.46
1913-14 ..	162	156	318	69	89	158	1	..	1	1	..	1	77	53	130	647	694	1,341	637	686	1,323	42.59	57.05	49.82	12.08	7.72	9.90
Totals	2,111	2,005	4,115	935	880	1,815	38	19	57	22	9	31	811	780	1,591	8,586	8,761	17,347	8,480	8,632	17,112	774.15	754.85	749.95	160.65	153.54	156.78
Average for 17 years	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	505.05	515.35	1020.41	498.82	507.76	1006.58	45.53	44.40	44.11	9.45	9.03	9.22

TABLE IV.—Shewing the history of the annual admissions for the past seventeen years, with the discharges and deaths, and the numbers of each year remaining on 31st March, 1914.

Year.	Admitted.				Of each year's admissions, discharged and died in the year.												Total discharged and died of each year's admissions to 31st March, 1914.												Remaining of each year's Admissions 31st March, 1914.			Year.
	New Cases.		Re-admissions.		Recovered.			Relieved.			Not improved.			Died.			Recovered.			Relieved.			Not improved.			Died.						
	M.	F.	M.	F.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.				
1897-98	91	82	18	13	204																								17	15	32	1897-98
1898-99	80	69	8	11	168																								11	18	29	1898-99
1899-1900	86	79	10	14	189																								16	21	37	1899-1900
1900-1901	88	87	16	9	200																								20	17	37	1900-1901
1901-1902	82	76	17	7	182																								12	20	32	1901-1902
1902-1903	104	98	14	10	226																								25	42	67	1902-1903
1903-1904	76	70	29	31	206																								18	25	43	1903-1904
1904-1905	103	106	21	10	240																								19	30	49	1904-1905
1905-1906	109	65	34	31	230																								22	16	38	1905-1906
19 6-1907	77	93	32	32	234																								10	25	35	1906-1907
1907-1908	119	115	29	16	279																								41	41	82	1907-1908
1908-1909	92	103	22	20	237																								25	28	53	1908-1909
1909-1910	129	107	10	16	262																								36	17	53	1909-1910
1910-1911	143	138	21	22	324																								55	46	101	1910-1911
1911-1912	124	120	14	10	268																								44	42	86	1911-1912
1912-1913	139	178	21	11	349																								67	91	158	1912-1913
1913-1914	142	139	20	17	318																								117	106	213	1913-1914
	1,775	1,725	336	280	2,116	69	89	158	1	1	1	1	1	74	51	125	857	831	1,688	24	22	46	23	7	30	652	545	1,197	653	681	1,334	

Summary of total admissions.

Percentage of cases recovered

do. relieved.

do. not improved.

do. died.

do. remaining

Males.

40.59

1.13

1.08

30.88

26.32

100.00

Females.

41.44

1.09

.34

27.18

29.95

100.00

Both Sexes.

41.01

1.11

.71

29.03

28.14

100.00

TABLE VI.—Shewing the length of residence in those discharged recovered and in those who have died during the year, 1913-1914.

Length of Residence.	Recovered.			Died.		
	Males	Females.	Total.	Males.	Females.	Total.
Under 1 month	1	..	1	6	3	9
From 1 to 3 months	6	11	17	11	6	17
From 3 to 6 "	20	26	46	4	5	9
From 6 to 9 "	14	28	42	5	2	7
From 9 to 12 "	6	6	12	7	7	14
From 1 to 2 years	13	12	25	6	7	13
From 2 to 3 "	4	3	7	8	5	13
From 3 to 5 "	1	2	3	12	4	16
From 5 to 7 "	1	1	2	6	4	10
From 7 to 10 "	..	..	..	4	5	9
From 10 to 12 "	3	..	3	3	..	3
From 12 to 15 "	..	..	..	2	3	5
From 15 to 20 "	..	..	..	2	2	4
From 20 to 25 "	..	..	..	..	..	..
From 25 to 30 "	..	..	..	1	..	1
From 30 to 35 "	..	..	..	..	..	..
From 35 to 40 "	..	..	..	..	..	..
Upwards of 40 "	..	..	..	..	..	..
	69	89	158	77	53	130

TABLE VII.—Showing the duration of the disorder on admission in the admissions, discharges and deaths during the year ended 31st March, 1914.

CLASS.	Admissions.			Discharges.						Deaths.		
				Recovered.			Removed, Relieved or otherwise.					
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
<i>First Class</i> —First attack, and within 3 months on admission ..	91	75	166	47	47	94	1	...	1	46	30	76
<i>Second Class</i> —First attack, above 3 and within 12 months on admission ..	18	20	38	5	17	22	..	..	...	10	10	20
<i>Third Class</i> —Not first attack, and within 12 months on admission ..	37	30	67	13	20	33	...	...	..	6	5	11
<i>Fourth Class</i> —First attack or not, but of more than 12 months on admission ..	13	16	29	2	5	7	...	...	...	10	8	18
<i>Fifth Class</i> —Congenital ..	1	...	1	...	...	..	1	...	1	...	..	...
Unknown ..	2	15	17	2	...	2	..	...	...	5	..	5
Total ..	162	156	318	69	89	158	2	...	2	77	53	130

TABLE VIII.—Shewing in quinquennial periods the ages of those admitted, recovered and died during the year 1913-14 and those remaining on 31st March, 1914.

Ages.	Admissions.			Recoveries.			Deaths.			Patients Resident 31st March, 1914.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
From 5 to 10 yrs	..	...	..	..	...	...	...	...	...	...	...	...
" 10 to 15 "	1	...	1	..	...	..	...	...	..	1	1	2
" 15 to 20 "	8	13	21	4	8	12	...	1	1	10	20	30
" 20 to 25 "	30	17	47	16	17	33	7	2	9	46	40	86
" 25 to 30 "	31	19	50	14	13	27	13	7	20	80	63	143
" 30 to 35 "	28	35	63	11	9	20	16	10	26	92	104	196
" 35 to 40 "	17	20	37	11	12	23	8	7	15	93	103	196
" 40 to 45 "	19	20	39	8	12	20	8	7	15	93	103	196
" 45 to 50 "	10	12	22	1	7	8	6	4	10	70	58	128
" 50 to 55 "	6	10	16	3	6	9	6	5	11	57	66	123
" 55 to 60 "	5	1	6	...	2	2	7	4	11	42	48	90
" 60 to 65 "	3	7	10	...	1	1	4	2	6	35	46	81
" 65 to 70 "	2	1	3	...	1	1	...	3	3	11	16	27
" 70 to 75 "	..	1	1	1	1	2	1	...	1	8	15	23
" 75 to 80 "	1	...	1	..	...	...	1	1	2	7	7	14
" 80 to 85 "	1	...	1	...	...	...	...	...	...	2	...	2
" 85 to 90 "	..	..	...	..	..	...	...	...	...	..	4	4
" 90 to 95 "	..	...	...	..	...	...	...	..	...	..	...	..
Unknown	..	...	...	...	...	...	...	..	...	...	...	..
Totals	162	156	318	69	89	158	77	53	130	647	694	1341
Mean Age..	33.71	34.55	34.13	31.17	33.76	32.46	39.37	41.66	40.51	40.43	41.96	41.19

TABLE IX.—Shewing the condition as to Marriage in the Admissions, Recoveries and Deaths during the year ended 31st March, 1914.

Condition in reference to Marriage.	Admissions.			Recoveries.			Deaths.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Single	113	94	207	58	53	111	48	30	78
Married	40	50	90	9	25	34	22	15	37
Widowed	5	10	15	...	11	11	3	7	10
Unknown	4	2	6	2	..	2	4	1	5
Divorced	..	...	...	..	..	..	...	..	...
Total	162	156	318	69	89	158	77	53	130

TABLE X.—Showing the probable causes of insanity in the Patients admitted during the year ended 31st March, 1914.

Cause of Insanity.	Number of instances in which each cause was assigned.											
	Number of cases. Admissions—Males, 162; Females, 156; Total, 318.											
	As pre-disposing cause.			As exciting cause.			As pre-disposing or exciting where these could not be distinguished.			Total.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Moral—												
Domestic trouble (including loss of relatives and friends)	1	...	1	...	...	...	1	...	1
Adverse circumstances (including business anxieties and pecuniary difficulties)	1	...	1	...	...	...	1	...	1
Mental anxiety and worry (not included under above two heads) and overwork	5	5	...	...	...	...	5	5
Religious excitement	1	1	...	...	...	...	1	1
Love affairs (including seduction)	2	2	...	...	...	...	2	2
Fright and nervous shock
Grief
Earthquake shock
Physical—												
Intemperance in drink	2	...	2	...	...	...	2	...	2
Sexual Intemperance
Venerial Diseases
Self-abuse (sexual)
Over-exertion
Ganga-smoking	2	...	2	...	...	...	2	...	2
Accident or injury
Puberty
Fevers	2	1	3	...	...	...	2	1	3
Privation and starvation
Senility	2	...	2	...	...	...	...	...	2	...	2
Other bodily disease
Previous attacks	40	23	63	...	...	...	...	...	40	23	63
Hereditary influence	41	43	84	...	...	...	...	...	41	43	84
Congenital defect ascertained
Adolescence	5	...	5	...	...	...	...	...	5	...	5
Epilepsy	15	7	22	...	...	15	7	22
Puerperal	2	2	...	...	...	2	2
Tubercular disease
Syphilis	1	1	...	...	...	1	1
Not known	67	69	136	...	...	67	69	136
Other ascertained causes
Childbirth	1	1	...	...	...	1	1
Traumatism	2	1	3	...	...	2	1	3
Pellagra	2	...	2	...	...	2	...	2
Organic disease	2	...	2	...	...	2	...	2

TABLE XI.—Shewing the form of mental disorder in the Admissions, Recoveries and Deaths during the year and the form of mental disorder of the inmates on 31st March, 1914.

Form of Mental Disorder.	Admissions.			Recoveries.			Deaths.			Remaining in Asylum.			
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	
Congenital or Infantile mental deficiency													
(a) with Epilepsy	...	2	...	2	...	...	...	1	1	12	...	12	
(b) without Epilepsy	...	2	...	2	...	...	...	...	...	27	...	27	
Epilepsy—Acquired	...	10	9	19	3	...	3	13	3	16	51	49	100
General Paralysis of the Insane	...	...	...	...	...	...	...	...	...	...	...	...
Mania—													
Acute	...	100	72	172	53	40	93	32	11	43	139	80	219
Chronic	...	5	16	21	1	...	1	21	15	36	288	200	488
Recurrent	...	38	30	68	11	20	31	...	4	4	36	30	66
a Potu	...	...	6	6	...	...	...	...	1	1	...	...	...
Puerperal	...	...	2	2	..	1	1	...	1	1	...	12	12
Senile	..	2	...	2	1	...	1	...	...	...	1	8	9
Melancholia—													
Acute	...	2	12	14	...	16	16	...	3	3	2	30	32
Chronic	...	...	3	3	...	...	...	...	1	1	...	20	20
Recurrent	...	...	3	3	...	12	12	...	1	1	...	29	29
Puerperal	...	...	...	...	...	...	...	...	...	...	...	5	5
Senile	...	...	..	...	...	...	...	...	...	...	...	16	16
Dementia—													
Primary	...	...	1	1	...	...	...	...	2	2	...	27	27
Secondary	...	...	...	..	...	...	...	11	8	19	90	180	270
Senile	...	1	2	3	...	...	...	...	1	1	1	8	9
Organic (<i>i.e.</i> from tumours, coarse brain lesions, etc.)	...	..	...	...	...	...	...	...	1	1	...	...	...
	162	156	318	69	89	158	77	53	130	647	694	1,341	

TABLE XII.—Shewing the previous occupations of patients admitted during the year, 1913-1914.

Males.

Occupation.	No.	Occupation.	No.
Cooper	1	Cartman	1
Butcher	1	Cab Driver	1
Blacksmiths	4	Planters	7
Teacher	1	Ex-Constable	1
Masons	3	Hatmaker	—
Carpenters	7	Agriculturist	1
Tobacconists	2	Engineer	1
Cultivators	6	Shoemakers	5
Stevedore	1	Coachtrimmer	1
Fishermen	2	Servants	2
Labourers	84	Tailors	3
Fireman	1	Bookbinders	2
Clerks	3	Bakers	4
Seaman	1	Gardener	1
Penkeeper	1	Watchmaker	1
Tanner	1	Not known	4
Sawyer	1	Goldsmith	1
Shopkeepers	2	Peddler	1
Produce Dealer	1		
Fitter	1	Total	162
Groom	1		

Females.

Occupation.	No.	Occupation.	No.
Domestic Servants ..	16	Cultivators ...	3
Dressmakers ...	14	Washerwomen ...	3
Agriculturist ..	1	Unknown ...	9
Higglers ...	8	Basket-maker ...	—
Labourers ...	94	Vagrant ...	—
Shopkeeper ...	—	Postmistress ...	—
Cook ...	—	None ...	—
Nurses ...	2	Housewife ...	1
Clerks ...	—	Typist ...	1
Teachers ...	3		
Barmaid ...	1		
Seamstresses ...	—	Total ...	156

TABLE XIII.—Showing the Physical condition of patients admitted in 1913-1914.

	Males.	Females.	Total.
In good bodily health and condition ...	12	13	25
In fair bodily health and condition ...	127	125	252
In poor, feeble, very feeble, bad and exhausted condition ...	20	14	34
Indifferent ...	2	4	6
Emaciated ...	1	—	1
	162	156	318

FINANCIAL STATEMENTS.

TABLE XIV.—Cost of maintenance for the year, 1913-14.

	£	s.	d.
Salaries ..	2,522	9	6
Wages ..	4,087	2	11
Religious Services ...	57	4	6
Provisions ..	9,404	16	11 $\frac{3}{4}$
Necessaries ...	620	18	9
Clothing and bedding ...	1,310	9	4
Equipment ...	213	15	6
Furniture ...	47	6	1
Wine and Spirits ...	35	6	10
Surgery and Dispensary ...	341	2	6
Funeral Expenses ...	160	7	8
Removals ...	49	0	11
Tenants Repairs ...	127	17	6
Farm and Grounds ...	88	18	5
Miscellaneous ...	193	0	2 $\frac{1}{2}$
Telephones ...	24	3	0
Scavengery ...	3	6	11
Lighting ...	386	7	2
	£19,613	14	8 $\frac{1}{4}$

LESS RE-IMBURSEMENTS.

Contributing Patients, &c. ...	£917	4	0
Immigration Fund (Law 31 of 1910) ...	185	17	9 $\frac{1}{4}$
Parochial Poor Rates ...	8,837	13	9 $\frac{1}{2}$
Net cost to General Revenue	£9,672	19	1 $\frac{3}{4}$

TABLE No. XV.—Parochial Maintenance Account, Law 30 of 1873.

	No. of Patients			Amount for	No. of Patients			Amount for				
	1912-13.				1913-14.							
	Males.	Fe- males.	Total.		Males.	Fe- males.	Total.					
				£	s.	d.				£	s.	d.
Kingston	107	154	261	1,520	15	0 $\frac{1}{4}$	122	165	287	1,703	11	6 $\frac{3}{4}$
St. Andrew	48	56	104	610	12	6 $\frac{1}{4}$	53	62	115	677	19	9 $\frac{1}{2}$
St. Thomas	19	35	54	324	9	5 $\frac{1}{4}$	21	36	57	331	1	3
Portland	21	23	44	274	6	6 $\frac{1}{4}$	22	27	49	279	14	7 $\frac{1}{4}$
St. Mary	53	38	91	525	3	10 $\frac{3}{4}$	54	38	92	507	9	9 $\frac{1}{4}$
St. Ann	40	42	82	503	11	6 $\frac{3}{4}$	37	43	80	517	10	7
Trelawny	16	33	49	284	8	11	16	31	47	284	9	1 $\frac{1}{2}$
St. James	37	43	80	457	1	1 $\frac{1}{4}$	36	46	82	483	15	10 $\frac{1}{4}$
Hanover	13	26	39	242	3	7 $\frac{1}{4}$	16	26	42	262	12	2
Westmoreland	48	58	106	623	7	5 $\frac{3}{4}$	53	71	124	722	11	3 $\frac{3}{4}$
St. Elizabeth	49	52	101	583	6	3 $\frac{3}{4}$	52	58	110	640	7	8 $\frac{2}{3}$
Manchester	46	28	74	455	11	11	53	38	91	501	1	10 $\frac{1}{2}$
Clarendon	53	46	99	625	12	3 $\frac{3}{4}$	61	52	113	699	16	11 $\frac{1}{2}$
St. Catherine	97	107	204	1,200	0	4 $\frac{1}{2}$	107	105	212	1,218	7	5
Port Royal	1	...	1	6	19	8 $\frac{1}{4}$	1	...	1	7	3	9 $\frac{1}{2}$
	648	741	1,389	8,237	10	8	704	798	1,502	8,837	13	9 $\frac{1}{2}$

TABLE XVI.—Statement respecting Minor Funds of the Jamaica Lunatic Asylum to 31st March, 1914.

1.—SERVANTS' FINE FUND.

	£	s.	d.
Balance on 31st March, 1913 ...	240	4	0 $\frac{3}{4}$
Receipts in 1913-1914 ...	15	5	5
	255	9	5 $\frac{3}{4}$
Expenditure 1913-1914 ...	18	5	0
Amount at credit 31st March, 1914 ...	237	4	5 $\frac{3}{4}$

2.—PATIENTS' FUND.

Balance on 31st March, 1913 ...	1,047	18	6 $\frac{1}{4}$
Receipts in 1913-14 ...	117	15	10 $\frac{3}{4}$
	1,165	14	5
Expenditure during 1913-1914 ...	61	7	6 $\frac{1}{2}$
Amount at credit 31st March, 1914 ...	1,104	6	10 $\frac{1}{2}$

3.—O'LOUGHLIN'S FUND.

Balance on 31st March, 1913 ...	435	8	9
Receipts in 1913-1914 ...	14	19	2
	450	7	11
Expenditure during 1913-1914 ...	14	5	2
Amount at credit 31st March, 1914 ...	436	2	9

TABLE NO. XVII.—Shewing the total number of patients under treatment from 1882-83 to 1913-1914; the Total Cost; the Re-imbursements-in-Aid of Expenses incurred by the Government; the sources from which they are derived; and the Cost of Lunatic Asylum to General Revenue.

Years.	Total number of Patients under treatment.	Total Cost.		Contributing Patients, &c.		Immigration Department.		Parochial Poor Rate.		Total Reimbursements-in-Aid.		Net Cost of the Lunatic Asylum to General Revenue.	
		£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.
1882-83	512	7,061	16 9½	189	14 5	None.		4,643	8 8	4,833	3 1	2,228	13 8½
1883-84	505	6,935	14 2½	208	6 2	"		5,203	10 11	5,411	17 1	1,523	17 1½
1884-85	513	6,871	12 6	252	13 2	"		4,879	16 0	5,132	9 2	1,739	3 4
1885-86	531	7,027	7 3	376	6 9	"		4,677	15 5	5,054	2 2	1,973	5 1
1886-87	530	7,067	10 4½	415	15 7	"		4,971	6 3	5,387	1 10	1,680	8 6½
1887-88	541	7,710	5 6	365	4 7	"		5,587	15 9	5,953	0 4	1,757	5 2
1888-89	584	8,781	14 0	391	0 6	"		6,677	13 2	7,068	13 8	1,713	0 4
1889-90 (6 months)	541	4,755	14 0	151	13 5	"		3,796	11 11	3,948	5 4	807	8 8
1890-91	648	10,093	10 7½	301	10 0	"		8,208	4 11	8,509	14 11	1,583	15 8½
1891-92	704	11,578	17 2½	471	6 10	"		9,276	3 2¼	9,747	10 0¾	1,831	7 1¾
1892-93	702	11,453	1 3¾	532	6 0	"		9,369	19 4	9,902	5 4	1,550	15 11¾
1893-94	729	11,280	18 1	492	16 4	"		9,197	13 9	9,690	10 1	1,590	8 0
1894-95	741	11,648	15 6½	384	2 8	"		9,457	16 2½	9,841	18 10½	1,806	16 8
1895-96	795	11,867	3 1¾	418	13 6	"		9,941	19 0	10,360	12 6	1,506	10 7¾
1896-97	851	12,901	18 4¼	458	15 2	"		10,932	11 0	11,391	6 2	1,510	12 2¼
1897-98	926	14,061	12 9	532	19 8	"		11,772	1 4	12,305	1 0	1,756	11 9
1898-99	953	13,651	4 1	359	10 8	"		11,767	0 9	12,126	11 5	1,524	12 8
1899-1900	956	13,559	10 1	454	9 1	"		11,514	19 3	11,969	8 4	1,590	1 9
1900-1901	1,019	14,445	3 2½	525	8 5	"		12,333	1 8½	12,858	10 1½	1,586	13 1
1901-1902	1,050	14,759	17 8	547	3 10½	"		12,468	15 9¼	13,015	19 7¾	1,743	18 0¼
1902-1903	1,089	15,029	0 6	517	18 1½	"		13,101	14 3½	13,619	12 5	1,409	8 1
1903-1904	1,165	16,017	7 10	406	6 2	"		13,926	12 3½	14,342	18 5½	1,674	9 4½
1904-1905	1,240	16,007	2 0	449	9 2	"		13,843	10 0¾	14,292	19 2½	1,713	6 0¼
1905-1906	1,264	16,852	9 7½	631	9 11½	"		14,396	14 5	15,028	14 4½	1,823	15 3
1906-1907	1,308	16,298	17 10	654	4 3½	"		14,246	2 7	14,900	6 10½	1,398	10 11
1907-1908	1,285	17,078	8 3	474	1 3	"		15,304	11 4½	15,778	12 7½	1,299	15 7½
1908-1909	1,269	17,786	8 11	633	5 10½	"		15,828	13 8½	16,461	19 7	1,324	9 4
1909-1910	1,320	17,453	7 7¾	459	16 1	"		15,934	10 4¼	16,394	6 5¼	1,059	1 2½
1910-1911	1,409	19,131	15 7	676	7 10	"	46 15 5¼	16,540	0 3¼	17,263	3 6½	1,868	12 0¼
1911-1912	1,439	17,797	1 2	735	0 8	"	131 11 0¾	15,722	17 11	16,589	9 7¾	1,207	11 6¼
1912-1913	1,548	18,414	4 1	889	13 3	"	194 11 9¾	8,237	10 8	9,321	15 8¾	9,092	8 4½*
1913-1914	1,634	19,613	14 8¼	1,103	1 9½	"	185 17 9¼	8,837	13 9½	9,940	15 6¾	9,672	19 1½
..	..	414,993	4 9¾	15,460	11 2¾		558 16 0¾	332,598	16 0¾	348,442	15 7	66,549	12 5¼

* This increase is due to General Revenue being charged with half of the cost of maintenance of parochial patients, hitherto borne by the parishes concerned.

TABLE No. XVIII.—A Return shewing the General Financial and other Operations of the Lunatic Asylum from the Year 1874-75 to the Year 1913-1914.

Year.	Daily Average Number.	Salaries and Religious Services.	Wages.	Provisions.	Necessaries.	Clothing, Furniture and Bedding.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1874-75	324.43	1,412 2 10	879 15 7½	3,037 14 1½	139 5 0	487 0 10
1875-76	324.21	1,553 13 10	923 4 10½	2,910 11 7¼	116 13 8¾	387 12 3
1876-77	342.52	1,660 4 11	868 8 2	2,832 18 11	134 15 11½	347 12 11½
1877-78	361.57	1,705 3 10	851 7 0½	2,959 18 10	161 10 6	379 8 6½
1878-79	364.06	1,853 6 4	805 8 10½	3,167 9 11½	224 0 10	333 12 2
1879-80	381.25	1,782 18 2	888 11 2	3,161 17 4	176 4 2	328 10 9½
1880-81	368.48	1,771 16 6	884 1 3	3,272 19 3½	218 3 2	289 10 3
1881-82	358.67	1,784 8 0	861 12 11	2,963 9 9	231 5 4	303 14 5
1882-83	364.06	1,829 3 8	922 2 5	3,152 13 8½	220 19 7	322 0 6½
1883-84	396.05	1,708 12 10	932 15 5½	3,203 7 0	174 4 7	372 11 9½
1884-85	399.98	1,792 10 10	936 2 3½	3,079 11 8	166 7 0	387 4 4
1885-86	382.09	1,843 11 0	923 0 0	3,150 1 10½	176 4 4	345 9 6
1886-87	407.58	1,556 16 7	933 13 2	3,416 13 5	216 19 8	421 12 3
1887-88	398.00	1,533 14 7	994 18 7	3,741 6 1½	270 19 10	408 6 3
1888-89	438.24	1,783 9 9	1,161 7 10	4,280 19 5	358 0 0	438 3 2
1889-90 (6 mons.)	465.17	943 10 10	579 11 11	2,351 14 0	190 8 7	209 9 6
1890-91	496.16	1,918 8 6	1,268 15 0	5,102 14 2	403 6 6	433 4 11½
1891-92	543.93	1,934 9 8	1,462 14 6½	6,035 16 4	424 12 8½	685 7 9
1892-93	558.57	1,969 0 0	1,461 6 9½	5,421 17 7¼	514 18 2	691 17 8½
1893-94	571.98	2,239 1 4	1,509 19 3	5,299 17 4½	494 0 1	599 5 11½
1894-95	592.72	2,394 17 3	2,259 5 2	4,565 11 10½	529 13 7	667 8 10½
1895-96	636.78	2,357 1 0	2,328 16 7	4,772 11 10¼	499 1 6	625 2 5
1896-97	694.15	2,519 17 9	2,410 18 3	5,336 10 2	545 9 2¾	803 18 8½
1897-98	759.70	2,554 1 11	2,838 16 10	5,470 9 11	615 17 4¼	993 2 4½
1898-99	774.96	2,586 1 2	3,175 7 6	5,342 10 9¾	529 7 0¾	924 14 4½
1899-1900	789.03	2,441 4 10	3,202 3 5	5,367 9 11	581 0 11	977 9 3½
1900-1901	844.32	2,564 0 11	3,198 9 11	5,807 12 5½	781 1 0½	992 2 6½
1901-1902	862.68	2,438 8 6	3,266 7 4	6,007 9 7½	799 8 4½	1,197 6 1¼
1902-1903	915.42	2,486 19 2	3,367 2 11	6,113 5 10¼	799 5 2	1,099 16 1¼
1903-1904	972.20	2,391 1 10	3,419 12 9	6,880 5 2¾	884 2 7	1,408 11 11
1904-1905	1022.26	2,142 4 10	3,470 1 11	7,618 9 3	882 7 4	1,069 3 9
1905-1906	1048.56	2,114 14 6	3,543 15 6	8,342 0 8½	979 19 10½	797 11 10
1906-1907	1048.74	2,230 17 7	3,672 11 10	7,535 11 0	994 15 4½	1,023 19 0
1907-1908	1033.61	2,302 16 7	3,784 15 8	8,084 9 1	305 12 9	1,525 9 7
1908-1909	1050.02	2,376 6 3	3,825 10 3	8,874 4 2	426 3 4	1,212 8 5
1909-1910	1081.00	2,432 0 0	3,834 1 9	8,616 8 1½	460 4 6	..
1910-1911	1137.15	2,451 6 5	3,944 3 1	9,364 13 9	369 15 9	..
1911-1912	1183.81	2,463 14 9	4,001 13 7	8,422 13 7	392 6 0	..
1912-1913	1271.94	2,449 3 2	4,048 7 9	8,445 0 10	571 2 0	..
1913-1914	1323.34	2,579 14 0	4,087 2 11	9,404 16 11¾	620 18 9	..
Year.	Wine, Spirits and Beer.	Surgery and Dispensary.	Funeral Expenses.	Tenants' Repairs.	Farm and Garden.	Miscellaneous and Telephone.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1874-75	90 0 3½	85 19 1½	32 18 6	136 16 7	265 0 6	99 5 7
1875-76	74 6 6	124 6 11	44 7 0	135 13 9	297 14 2½	99 10 5½
1876-77	59 12 6	65 10 6½	36 19 4½	129 13 11½	251 18 2	68 3 4½
1877-78	34 2 9	99 9 7½	41 9 9½	134 15 6½	195 3 1½	192 16 6
1878-79	30 5 9	49 4 7	38 10 1	104 4 8	151 6 4	175 18 10
1879-80	34 11 0	76 13 2	50 1 5	122 3 0½	218 14 5½	222 13 4
1880-81	57 10 0	65 13 2½	110 19 5	122 18 0	211 15 5½	215 12 9
1881-82	48 18 6	49 10 7½	71 4 11	117 0 11	145 15 1	243 3 3
1882-83	30 7 0	32 5 1½	123 12 6	116 1 8	87 1 9½	199 18 5½
1883-84	61 4 0	68 11 8	78 3 3	129 10 9½	97 8 3½	84 11 6½
1884-85	46 18 0	25 18 4	84 10 8½	112 3 7½	122 7 10	98 8 5½
1885-86	56 16 0	30 18 11	108 3 8	125 9 3	132 0 7	112 6 7½
1886-87	56 0 0	68 10 4	52 5 10	120 12 1	122 3 10½	71 12 2
1887-88	65 13 4	67 2 7½	61 5 1½	282 0 2½	151 5 11	109 10 2
1888-89	68 14 0	104 15 7	78 5 9	151 5 8	134 8 4	206 19 9
1889-90 (6 mons.)	32 14 6	101 7 0	41 1 5	105 1 0	88 5 11	88 16 2
1890-91	40 12 0	168 9 10	66 16 0	176 3 3½	160 3 0	190 11 7½
1891-92	45 13 6	141 18 3	78 8 3	190 6 2	171 9 4	175 12 2½
1892-93	41 12 6	207 7 7	71 2 8	233 0 6½	177 14 11	187 6 4
1893-94	37 6 6	184 10 4	79 7 0	191 16 0½	177 14 3	194 12 8½
1894-95	37 2 8	195 3 4	68 5 11	239 19 2¾	194 10 8	234 16 1½
1895-96	39 7 9	197 17 10	47 11 8	238 19 3	197 18 11	235 4 9½
1896-97	33 7 6	194 1 4	50 10 2½	259 7 7	219 4 9	242 16 10½
1897-98	51 0 6	238 4 2½	64 2 11	289 1 8	262 7 3¼	366 2 3½
1898-99	31 10 2½	253 15 2½	68 2 4½	164 17 3¾	153 12 11½	215 13 5¼
1899-1900	35 0 3	218 16 1	72 12 6½	144 19 2½	137 17 9	251 17 1½
1900-1901	39 1 6	133 0 2	45 0 9	163 15 7½	149 17 7	265 3 6½
1901-1902	43 0 6	210 15 0	61 17 4	147 17 7¼	145 14 8¾	254 2 4
1902-1903	44 13 0	220 11 10	46 2 5	171 10 1¾	151 0 4½	262 12 1¾
1903-1904	60 16 0	210 18 3	79 18 4	187 6 10	153 2 4½	266 15 0¾
1904-1905	42 6 6	180 14 6	73 2 2	138 5 6	88 1 2	212 15 3
1905-1906	24 18 3	271 2 6	73 5 7	180 2 5	81 17 3	217 14 1½
1906-1907	22 8 6	318 1 4	64 19 0	162 14 0	33 9 0½	198 13 5
1907-1908	36 19 6	288 18 11½	72 19 6	134 14 0	40 0 6½	362 2 11
1908-1909	23 1 3	264 14 6	72 8 0	173 3 5	27 4 4	184 1 6
1909-1910	55 19 3	255 10 11	70 14 0	80 17 0	96 11 9	213 18 3½
1910-1911	53 8 9	278 13 2	62 16 0	143 0 11	104 2 3	266 17 1
1911-1912	30 8 5	298 8 4	71 5 3	85 5 2	89 15 6	177 14 11
1912-1913	29 19 11	298 6 4	67 16 10	85 13 7	94 1 4	168 6 6
1913-1914	35 6 10	341 2 6	100 7 8	127 17 6	88 18 5	217 3 2½

TABLE No. XVIII., continued

Year	Removal of Lunatics.	Scaven- gery.	Furniture Public Depart- ments.	Total Cost.	Amount of Reimburse- ments from contribut- ing Patients, &c.	Cost exclusive of reimburse- ments from Par. Rates, &c.	Weekly Rate per Head.	Admitted during the Year.		
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	Males.	Females.	Total.
1874-75	16 19 0	..	..	6,682 18 0	888 1 6	5,844 16 6	0 6 10 ³ / ₄	46	38	84
1875-76	4 0 0	..	..	6,671 15 1 ¹ / ₂	752 1 6	5,919 13 7 ¹ / ₂	0 6 11 ³ / ₄	58	43	101
1876-77	17 12 8	..	..	6,473 11 5 ¹ / ₂	827 5 0	5,646 6 5 ¹ / ₂	0 6 3 ³ / ₄	69	43	112
1877-78	19 0 3	..	..	6,774 6 4 ¹ / ₂	764 18 10	6,009 7 6 ¹ / ₂	0 6 4 ¹ / ₂	54	49	103
1878-79	11 0 3	..	..	7,004 8 11	159 12 10	6,844 16 1	0 7 2 ¹ / ₄	53	51	104
1879-80	14 2 10	..	..	7,007 0 10 ¹ / ₂	168 7 8	6,908 13 2 ¹ / ₂	0 6 11	56	59	115
1880-81	30 9 8	..	..	7,251 9 2	191 7 2	7,060 2 0	0 7 4	65	42	107
1881-82	26 9 6	..	..	6,846 13 2 ¹ / ₂	134 16 1	6,711 17 1 ¹ / ₂	0 7 2	42	56	98
1882-83	25 10 4	..	..	7,061 16 9 ¹ / ₂	189 14 5	6,872 2 4 ¹ / ₂	0 7 2 ³ / ₄	73	68	141
1883-84	24 13 0	..	..	6,935 14 2 ¹ / ₂	208 6 2	6,727 8 0 ¹ / ₂	0 6 5 ³ / ₄	80	59	139
1884-85	19 10 0	..	..	6,871 12 6	252 13 2	6,618 19 4	0 6 4	56	64	120
1885-86	28 18 1	..	..	7,027 7 3	376 6 9	6,651 0 6	0 6 8	69	70	139
1886-87	30 11 0	..	..	7,067 10 4 ¹ / ₂	415 15 7	6,651 14 9 ¹ / ₂	0 6 3 ¹ / ₂	79	62	141
1887-88	24 2 9	..	..	7,700 5 6	365 4 7	7,345 0 11	0 7 0	78	71	149
1888-89	15 4 9	..	..	8,781 14 0	391 0 6	8,390 13 6	0 7 4	92	69	161
1889-90 (6 mos.)	10 9 0	..	..	4,755 14 0	151 13 5	4,604 0 7	0 7 7	38	43	82
1890-91	22 1 0	..	..	10,093 10 7 ¹ / ₂	301 10 0	9,792 0 7 ¹ / ₂	0 7 7	93	79	172
1891-92	25 3 6	207 5 0	..	11,578 17 2 ¹ / ₂	471 6 10	11,107 10 4 ¹ / ₂	0 7 8 ³ / ₄	80	106	186
1892-93	19 3 6	195 12 8	261 0 4	11,453 1 3 ³ / ₄	532 6 0	10,920 15 3 ³ / ₄	0 7 7	78	80	158
1893-94	18 7 9	192 19 0	62 0 6	11,280 18 1	492 16 4	10,788 1 9	0 7 2	75	78	153
1894-95	19 6 6	193 9 4 ¹ / ₂	49 5 0	11,648 15 6 ¹ / ₂	384 2 8	11,264 12 10 ¹ / ₂	0 7 3 ¹ / ₂	84	85	169
1895-96	27 7 6	192 0 2	47 8 11	11,867 3 1 ³ / ₄	418 13 6	11,448 9 7 ³ / ₄	0 6 10 ¹ / ₂	90	84	174
1896-97	27 12 0	208 4 0	50 0 0	12,901 18 4 ¹ / ₂	458 15 2	12,443 3 2 ¹ / ₂	0 6 10 ¹ / ₂	81	106	187
1897-98	19 0 3	199 11 1	99 14 2	14,061 12 9	532 18 9	13,528 13 1	0 6 10	109	95	204
1898-99	39 10 9	126 0 11	..	13,651 4 1	359 10 8	13,291 13 5	0 6 7	88	80	168
1899-1900	24 13 6	104 5 3	..	13,559 10 1	454 9 1	1,305 1 0	0 6 4	96	93	189
1900-1901	26 4 3	116 12 7	163 0 4	14,445 3 2 ¹ / ₂	525 8 5	13,919 14 9 ¹ / ₂	0 6 4	104	96	200
1901-1902	29 5 9	115 12 6	42 12 0	14,759 17 8	547 3 10 ¹ / ₂	14,212 13 9 ¹ / ₂	0 6 4	99	83	182
1902-1903	22 6 9	111 10 5	94 12 11	15,029 0 6	517 18 1 ¹ / ₂	14,511 2 4 ¹ / ₂	0 6 1	118	108	226
1903-1904	17 5 9	22 0 5	35 10 6	16,017 7 10	406 6 2	15,611 1 8	0 6 2	105	101	206
1904-1905	19 18 0	17 17 1	50 18 0	16,006 5 3	449 9 2	15,557 12 10	0 5 10	124	116	240
1905-1906	30 11 3	3 18 0	190 17 10	16,852 9 7 ¹ / ₂	631 19 11 ¹ / ₂	16,220 9 8	0 5 11	134	96	230
1906-1907	35 18 3	..	4 19 6	16,298 17 10	654 4 3 ¹ / ₂	15,644 13 0 ¹ / ₂	0 5 10	109	125	234
1907-1908	30 12 9	2 16 3	..	17,078 8 3	474 1 3	15,604 7 0	0 6 3 ¹ / ₄	148	131	279
1908-1909	22 11 0	1 11 8	..	17,786 8 11	633 5 10 ¹ / ₂	17,153 3 0 ¹ / ₂	0 6 5	114	123	237
1909-1910	22 2 3	0 12 6	70 2 1	17,453 7 7 ³ / ₄	459 16 1	16,993 11 6 ³ / ₄	0 6 1 ¹ / ₂	139	123	262
1910-1911	39 6 4	..	68 15 1	19,131 15 7	723 3 3 ¹ / ₄	18,408 12 3 ³ / ₄	0 6 0	164	160	324
1911-1912	31 15 10	1 18 3	133 7 8	17,797 1 2	866 11 8 ³ / ₄	16,930 9 5 ¹ / ₄	0 5 5 ³ / ₄	138	130	268
1912-1913	30 1 7	5 14 2	213 12 4	18,414 4 1	889 13 3	17,524 10 10	0 5 4	160	189	349
1913-1914	49 0 11	3 6 11	47 6 1	19,613 14 8 ¹ / ₄	1103 1 9 ¹ / ₄	18,510 12 11	0 5 4 ³ / ₄	162	156	318

Year.	Lighting.	Clothing and bedding	Equipment.
	£ s. d.	£ s. d.	£ s. d.
1907-1908	166 9 2	—	—
1908-1909	303 0 10	—	—
1909-1910	311 11 8	791 1 6 ³ / ₄	141 12 0
1910-1911	463 13 4	1,261 8 8	259 9 0
1911-1912	473 9 9	1,079 15 4	153 8 10
1912-1913	399 13 9	1,351 0 6	171 3 6
1913-1914	386 7 2	1,310 9 4	213 15 6

LEPERS' HOME.

Report for the year ended 31st March, 1914.

Jamaica Leper Asylum, 6th June, 1914.

Sir,

I have the honour to present the Annual Report on this Institution for the financial year ended 31st March, 1914.

1. *Staff, etc.*—I desire to commend the staff for the manner in which they have performed their duty which is often of a very arduous and unpleasant nature.

2. *Discipline.*—The general conduct of the inmates has been good. I regret to report that a small number was very insubordinate and as a result the Superintendent was wounded. The Resident Magistrate dealt with the case and as a result their conduct has since been most exemplary.

3. *Occupation.*—The Farm is maintained in excellent cultivation. The washing is all performed by the female inmates.

4. *Gifts.*—I desire to thank the Custos, Hon. A. A. Fleming, Dr. J. H. Peck, Miss Soares, The Treasury Magazine Club, per Mr. Fraser, St. Andrews Club, Educational Supply Co. and Jamaica Times for books and magazines and the Custos and Mr. S. M. Mendez for valuable gifts of fruit.

5. The Spiritual welfare of the inmates has been continually attended to by the Rev. Canon Hendrick and Fr. Pilliod, S.J. Devoted Visitors have been Miss Mackglashan and Miss Leon, and some members of the St. Andrew Brotherhood.

6. *Statistics.*—The admissions were 21, slightly over the general average, and none were re-admissions. The death rate, 6 per cent., was phenomenally low. This is the lowest death rate noted since the Asylum has been devoted to treating cases of leprosy only. The longevity of leper life was as follows:—

Tubercular	..	..	Males	13 years
"	..	..	Females	12 "
Anaesthetic	..	..	Males	22 "
"	..	..	Females	nil

The usual statistical tables are attached.

7. *The Treatment of Leprosy.*—The treatment by Nastin was abandoned in this institution after a fair trial.

For over two years I have been using "Antileprol" with very excellent and gratifying results. I may mention that for the past 16 years I have continuously used Chaulmoogra Oil in the treatment of leprosy with very variable results. It would appear that this has been due to the fact that the supply of pure oil has been unreliable and spurious oils have been placed on the market.

Anti-leprol is a refined product of Chaulmoogra Oil and has proved in this Asylum the best treatment I know of. My results coincide with those noted at Robben Island in the South African Union. The drug is used both intramuscularly and internally in small capsules. I hope to be able to ask shortly for the discharge of some patients cured.

Chaulmoogra Oil unfortunately called *Oleum Gynocardiae* is not obtained from the seeds of the *Gynocardia odorata*, but from the seeds of the *Taraktogenos Kurzii* growing in Burma and adjacent parts of Assam, generally in the region of streams. The true oil remains liquid at all ordinary temperatures and in no way resembles oil of *Gynocardia*.

I have the honour to be,

Sir,

Your obedient servant,

W. D. NEISH,
Medical Superintendent.

The Hon. J. E. Ker,
Superintending Medical Officer.

TABLE I.—General Statistics for the year ending 31st March, 1914 (1st April 1913, to 31st March, 1914).

			Males.	Females.	Total.
Remaining in Asylum 31/3/13	..	..	64	47	111
Admitted, 1913 to 1914	..	..	12	10	22
Discharged, 1913 to 1914	..	..	4	..	4
Absconded, 1913 to 1914	..	..	1	..	1
Died 1913 to 1914	..	..	5	3	8
Remaining in Asylum 31/3/1914	..	..	66	54	120

TABLE No. II.—Comparative Statistics from 1st October, 1878, to 31st March, 1914.

Year.			Admissions.		Discharges.		Deaths.		Remaining at end of Year.		Death rate per 100.	Re-admission of Lepers.
			Lepers.	Non-Lepers.	Lepers.	Non-Lepers.	Lepers.	Non-Lepers.	Lepers.	Non-Lepers.		
1878-79	..	..	26	39	2	40	10	3	40	31	10.31	..
1879-80	..	..	26	43	8	31	7	..	51	33	5.	..
1880-81	..	..	39	101	16	72	11	4	63	58	6.69	..
1881-82	..	..	38	115	23	107	13	5	65	61	6.50	..
1882-83	..	..	40	85	22	96	8	3	75	47	4.38	..
1883-84	..	..	30	71	26	63	9	3	70	52	5.38	..
1884-85	..	..	33	87	18	80	14	..	71	59	5.78	..
1885-86	..	..	39	131	17	114	16	2	77	74	6.	..
1886-87	..	..	25	141	17	130	16	6	69	79	6.94	..
1887-88	..	..	32	8	..	19	23	8	78	60	16.48	..
1888-89	..	..	31	93	4	98	11	6	94	49	6.48	..
Oct. '89 to March '90	..	..	9	22	6	35	12	2	82	37	8.04	..
1890-91	..	..	34	67	15	88	15	2	86	14	7.74	..
1891-92	..	..	38	2	8	9	15	2	106	5	12.16	..
1892-93	..	..	26	1	16	4	1	..	100	2	8.27	..
1893-94	..	..	23	2	24	3	20	..	79	1	15.74	7
1894-95	..	..	26	1	12	..	18	..	75	2	16.82	14
1895-96	..	..	37	2	8	4	10	..	94	..	8.62	10
1896-97	..	..	40	2	11	2	16	1	106	..	12.5	9
1897-98	..	..	38	1	3	2	13	..	127	..	8.96	3
1898-99	..	..	20	2	8	3	20	..	118	..	13.6	5
1899-1900	..	..	27	3	3	2	20	..	122	1	13.5	6
1900-01	..	..	19	3	6	2	15	..	120	2	10.3	1
1901-02	..	..	9	1	4	..	14	2	110	2	11.4	2
1902-03	..	..	19	..	2	2	17	..	108	2	13.	3
1903-04	..	..	33	3	5	3	20	..	117	1	13.7	1
1904-05	..	..	25	..	5	..	23	..	114	1	16.1	2
1905-06	..	..	19	..	3	..	14	..	115	1	10.4	3
1906-07	..	..	14	..	1	..	15	..	113	1	11.62	1
1907-08	..	..	12	..	5	1	14	..	105	..	11.1	..
1908-09	..	..	24	..	..	1	15	..	112	1	11.6	4
1909-10	..	..	12	1	7	..	10	6	102	2	12.27	..
1910-11	..	..	24	..	6	1	15	1	103	1	12.6	4
1911-12	..	..	25	1	5	1	10	..	113	1	7.7	1
1912-13	..	..	12	2	2	1	14	..	109	2	10.9	2
1913-14	..	..	21	1	5	..	8	..	117	3	6.	..

TABLE III.—Return of Admissions for 1913 to 1914.

No.	Names.	Age Years.		Form of Leprosy.	Years Afflicted	Re- admitted.	Country.	Late Residence.	Date of Admission
		M.	F.						
1	Mrs. L. Reid ..	..	30	A.	1	No	Jamaica	Kingston	7.4.13
2	Megan ..	38	..	A.	5	..	India	St. Catherine	7.4.14
3	Stanley Gibbs ..	26	..	T.	2	..	Jamaica	Trelawny	16.5.13
4	Lancelot Wynt ..	25	..	A.	?10	..	..	Manchester	5.6.13
5	Jas. Spencer ..	25	..	A.	2	..	"	Kingston	7.6.13
6	Adolphus Pinnock ..	20	..	T.	2	"	"	Clarendon	13.6.13
7	Uria Johnson ..	..	10	T.	?3	"	..	Kingston	13.6.13
8	Samuel Jackson ..	38	..	T.	3	"	"	Clarendon	24.6.13
9	Angelina Johnson ..	..	46	A.	5	"	"	St. Catherine	26.6.13
10	Louise Mahoney ..	..	47	T.	5	"	"	Kingston	31.7.13
11	Alice Campbell ..	..	22	T.	1	"	"	St. Andrew	9.9.13
12	Sarah Henry ..	..	44	A.?	1	"	"	St. Catherine	30.10.13
13	Daniel Kerr ..	53	..	A.?	7	"	"	St. James	12.12.13
14	John Lenon ..	27	..	T.	2	"	"	Clarendon	17.12.13
15	Carm. Thornley ..	..	17	T.	4	"	"	Kingston	15.1.14
16	Robt. Brice ..	35	..	A.	3	"	"	St. Catherine	19.1.14
17	Dan Matt. ..	..	30	A.	?1	"	India	St. Mary	30.1.14
18	Geo. McKenzie ..	24	..	A.	2	"	Jamaica	Clarendon	31.1.14
19	Jas. Brown ..	50	..	A.	2	"	"	"	31.1.14
20	J. A. Harris ..	40	..	T.	?2	"	"	Kingston	7.2.14
21	Betz Ann Linton ..	..	29	T.	3	"	"	Westmoreland	10.2.14
22	Sarah Reid ..	..	40	Non- Leper	16	"	"	"	16.3.14

TABLE IV.—Birthplace of those admitted, 1913 to 1914.

Names.	Males.	Females.	Total.
Kingston ..	2	4	6
Clarendon ..	5	..	5
St. Catherine ..	1	2	3
Westmoreland ..	..	2	2
India ..	1	1	2
Manchester ..	1	..	2
St. Andrew ..	..	1	1
St. James ..	1	..	1
Trelawny ..	1	..	1
	12	10	22

TABLE V.—Return of those discharged during 1913 to 1914.

No.	Names.	Years Age.		Date of Admission.	Years afflicted.	Form of Disease.	Date of Discharge.	Remarks.
		M.	F.					
1	Megan ..	38	..	7.4.13	5	T.	23.4.13	Absconded
2	Joseph Williams ..	43	..	11.11.1895	39	A.	5.5.13	
3	Hsie ..	28	..	3.1.12	3	A.	14.7.13	Law 15 of 1896 sec.
4	W. Small ..	29	..	4.10.1904	13	A.	1.12.13	" "
5	Edward Peart ..	24	..	12.3.09	7	A.	9.3.14	

TABLE VI —Birthplace of those discharged.

Names.	Males.	Females.	Total
Manchester	3	..	3
India	2	..	2
Total	5	..	5

TABLE VII.—Return of Deaths during 1913 to 1914 (1st April 1913 to 31st March 1914).

No.	Names.	Country.	Colour.	Age.		Date of Admission.	Date of Death.	Form of Leprosy.	Total years afflicted.	Cause of Death.
				Years.						
				M.	F.					
1	Margaret Lewis	Jamaica.	Black	..	54	5.5.1909	2.4.13	T.	11	Pul. Tuberculosis
2	William Archer		White	68	..	23.10.11	3.4.13	Non-Leper	2	General Tuberculosis
3	Joseph McIntosh		Brown	41	..	1.10.12	18.4.13	A.	27½	Chr. Diarrhœa
4	Ryna Ashman ..		"	..	34	29.12.1893	4.8.13	T.	21	Exhaustion
5	Eliza Gayle ..		Black	..	19	11.10.13	12.10.13	T.	4	Pul. Tuberculosis
6	Jonathan Lawrence		"	26	..	3.8.12	30.1.14	Non-Leper	8½	Chr. Diarrhœa
7	Frank Noyes ..		Brown	27	..	30.4.11	17.3.14	T.	13	Exhaustion
8	Joseph Morgan		Black	32	..	30.10.12	17.3.14	A.	16½	Tetanus Indio-puthic

Average longevity of Leprosy in those who died.

Tubercular	..	Female	12 years
"	..	Male	13 years
Anaesthetic	..	Female	nil
"	..	Male	22 years

General Death Rate 6 per cent.

TABLE VIII.—Birthplace of those who died 1913 to 1914.

Birthplace.	Male.	Female.	Total.
Clarendon ..	..	2	2
Trelawny ..	1	..	1
Westmoreland	2	..	2
Manchester ..	..	1	1
St. Thomas-ye-East	1	..	1
St. Catherine ..	1	..	1
	5	3	8

TABLE IX.—Chief Inter-current Diseases treated during 1913 to 1914.

Disease.	Form of Leprosy.						Other Diseases.	Total		Grand Total.
	Tubercular.		Anaesthetic.		? Leprosy.			M.	F.	
	M.	F.	M.	F.	M.	F.				
General Diseases—										
Mal. Feb.	45	30	20	16	4	5	..	71	51	126
Syphilis .. ..	..	..	..	..	..	..	2	..	2	2
Dysentery	15	17	8	15	..	..	..	23	32	55
Diseases of Nervous System—										
Epilepsy .. ..	..	..	..	..	..	..	1	1	..	1
Neuritis	8	7	12	25	..	..	..	20	32	52
Eye—										
Conjunctivitis ..	55	48	39	15	..	..	..	94	63	157
Iritis	32	45	28	35	..	..	..	60	80	140
Nose—										
Rhinitis	25	32	45	22	..	..	..	57	67	124
Digestive—										
Diarrhoea	82	76	93	76	..	..	..	175	152	327
Indigestion	100	98	120	85	..	..	..	220	185	405
Constipation ..	96	85	73	86	..	..	..	169	171	340
Urinary System—										
Nephritis	10	7	9	6	..	..	..	19	13	32
Skin—										
Ulcers, etc. ..	130	125	86	92	..	..	..	216	217	433

